

1990 760 Owners Manual

U.S.A. & Canada

ESSENTIAL INFORMATION

Please take the time to fill out the forms on this page. When completed, these forms will provide information essential to the proper servicing and ordering of parts for your Volvo.

Owner:

Name:_____

Address:_____

City, State:_____ Zip Code_____

Tel. No._____

Notice:

Your Volvo is designed to meet all applicable safety and emission standards, as evidenced by the certification labels attached to the door opening sheet metal and on the left wheel housing in the engine compartment. For further information regarding these regulations, please contact your dealer.

Vehicle Information (see "Label information" section)

Vehicle License Number_____

Vehicle Identification Number (VIN)_____

Service Designation Number_____

Engine Designation_____

See "Specifications" section

Color Code_____

Upholstery_____

Tire designation_____

See "Tires" Section

Vehicle Capacity_____

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Important

You should be familiar with the information in the first three chapters before you operate the car. Information contained in the balance of the manual is extremely useful and should be studied after operating the vehicle for the first time.

The manual is structured so that it can be used for reference. It should thus be kept in the car for ready access.

All information, illustrations and specifications contained in this manual are based on the latest product information available at the time of publication. Volvo reserves the right to make model changes at any time, or to change specifications or design, without notice and without incurring obligation.

pg. 2 This manual deals with the operation and care of your Volvo

Welcome to the world-wide family of Volvo owners. We trust that you will enjoy many years of safe driving in your Volvo, an automobile designed with your safety and comfort in mind. To help ensure your satisfaction with this vehicle, we encourage you to familiarize yourself with the equipment descriptions, operating instructions and maintenance requirements/recommendations in this manual. We also urge you and your passengers to wear seat belts at all times in this (or any other) automobile. And, of course, please do not operate a vehicle if you may be affected by alcohol, medication or any impairment that could hinder your ability to drive.

Your Volvo is designed to meet all applicable safety and emission standards, as evidenced by the

certification labels attached to the driver's door opening and on the left wheel housing in the engine compartment. For further information please contact your dealer.



pg. 3 Seatbelts: "Something We Believe In"

Despite our strongest recommendations, and your best intentions, not wearing a seat belt is like believing "It'll never happen to me!". Volvo urges you and all adult occupants of your car to wear seat belts and ensure that children are properly restrained, using an infant, car or booster seat determined by age, weight and height.

Fact: In every state and province, some type of child-restraint legislation has been passed. Additionally, most states and provinces have already made it mandatory for occupants of a car to use seat belts.

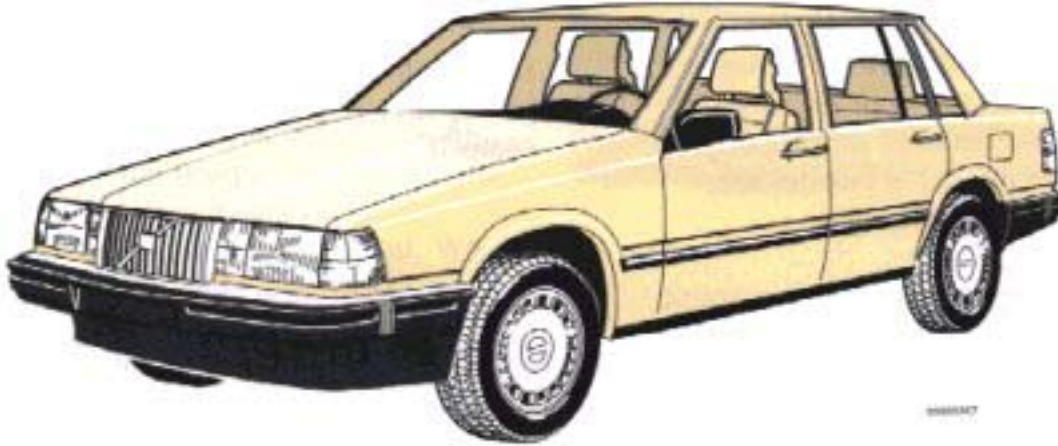
So, urging you to "buckle up" is not just our recommendation - legislation in your state or province may mandate seat belt usage. The few seconds it takes to buckle up may one day allow you to say, "It's a good thing I was wearing my seat belt".



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Introduction

pg. 4 Introduction

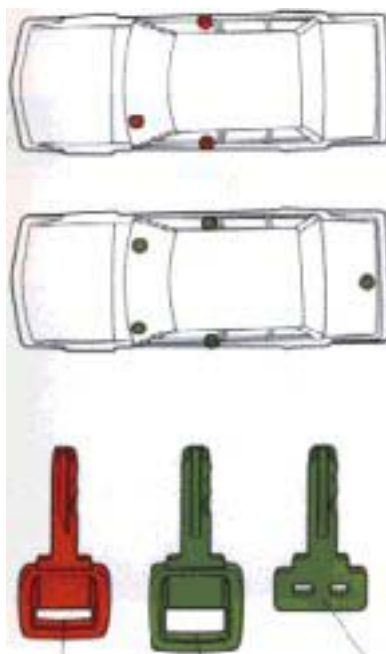


This Owner's manual provides information on driving and maintaining your Volvo

It should be noted that there are differences among model versions and market requirements; thus, you may find features described and/or pictured in this manual that do not appear on your car. Should you require more detailed information with regard to adjustments or repairs please contact your Volvo dealer.

Do not export your Volvo to another country before investigating the country's applicable safety and exhaust emission requirements. In some cases it may be difficult or impossible to comply with these requirements. Modifications to the emission control system(s) may render your Volvo not certifiable for legal operation in the U.S., Canada or other countries.

pg. 5 Keys



Service key
Front doors, starting (ignition)
Steering wheel lock

Owner's key
This key operates all locks in
the vehicle

Wallet key
This key operates all locks in
the vehicle

Number tag



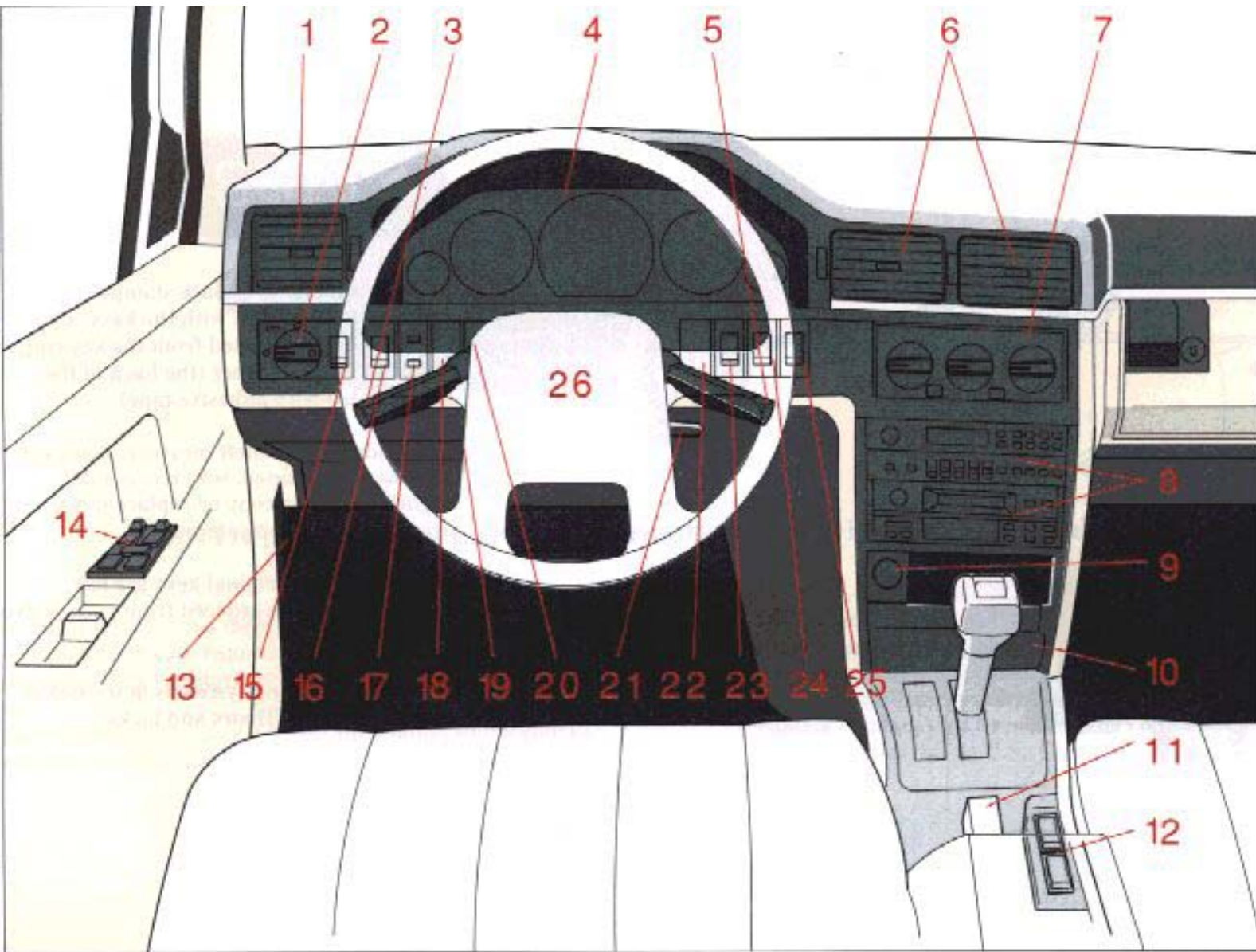
The key number codes are stamped on a separate tag supplied with the keys. This tag should be separated from the key ring and kept in a safe place (the back of the tag is coated with adhesive tape). As an added anti-theft measure, new keys have been developed, which may take slightly longer to copy or replace if the original keys are misplaced. In the event of the original keys are lost, duplicates may be ordered from your Volvo dealer. The central locking system is described in detail in section "Doors and locks".



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Instruments, switches and controls

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The pages in this section provide detailed descriptions of the vehicle's instruments and controls. Note that vehicles may be equipped differently, depending on special legal requirements.

pg. 8 Instruments



NOTE : Canadian model speedometers/odometers indicate kilometers only.

- 1 Fuel gauge
- 2 Quartz crystal clock
- 3 Speedometer
- 4 Trip odometer
- 5 Odometer
- 6 Trip odometer reset button
- 7 Tachometer
- 8 Boost gauge (Turbo models)
- 9 Coolant temperature gauge

pg. 9 Instruments

Tachometer

Reads thousands of engine rpm.

Engine should not be operated in red range.

Maximum continuous rpm is 6000

The turbo engine is equipped with an rpm-limiter system; at engine speeds above approx. 6200 rpm, the engine will begin to misfire to reduce the risk of damage.

Trip odometer

Used for measuring shorter distances.

(last figure represents 1/10 mile or km)

A black number on a white background = original instrument. A red number on a white background = replacement instrument.

Trip odometer reset knob

Push in to reset

Temperature gauge

The pointer should be approximately midway on the gauge face when driving. If the pointer approaches the red range repeatedly, check coolant level and fan belt tension. See sections "Coolant" and "Drive belts".

Do not continue to drive the car with the pointer in the red range.

WARNING! Allow engine to cool before adding coolant.

Fuel gauge

Fuel tank capacity:

Wagons: approx. 15.8 US gals (60 liters).

Models with low-fuel warning light:

When the warning light on the fuel gauge comes on, there are approximately 1.6 US gals. (6 liters) of fuel remaining in the tank.

Models without low-fuel warning light:

The red range represents approx. 2.4 US gals. (9 liters) for wagons and 3.4 US gals. (13 liters) for sedans. See "Refueling" for further information.

Boost pressure gauge

(Turbo-engine cars only)

The boost pressure gauge is divided into sections.

Black section: The engine acts as a normally-aspirated engine. Best fuel economy is achieved while driving in this range. Yellow section: The turbo is providing boost pressure.

pg. 10 Indicator and warning lights

1 Turn signal, left

2 Turn signal, right

3 Check engine

4 Direction indicator, trailer

5 Service reminder light

6 Low washer fluid level

If the lamp glows continuously there is only about 1/2 - 1 US qt remaining in the washer fluid reservoir

7 Rear fog lamps

8 Bulb failure warning lamp

9 Alternator not charging

10 Low engine oil pressure

11 High beams

12 Brake failure

13 Parking brake applied

14 Anti-lock Brake System (ABS)

(see next page)

- 15 (not in use)
- 16 (not in use)
- 17 4th gear (overdrive) disengaged
- 18 Seat belt reminder light
- 19 SRS (Supplemental Restraint System)
- 20 (not in use)
- 21 (not in use)
- 22 (not in use)



When the ignition key is turned on and before the engine starts, all of the warning lights should be on to test the function of the bulbs. Should a light not go off after the engine has started, the system indicated should be inspected. (However, the parking brake reminder light will not go off until the parking brake is fully released.)

pg. 11 Warning lights

The warning lights described on this page should never stay on when driving



Alternator warning light

If the light comes on while the engine is running, check the tension of the generator drive belt as soon as possible.

NOTE: This warning lights is illuminated if the generator is not charging. However, parking brake, brake failure and bulb failure warning lights will be illuminated at the same time due to the design of the system.

CHECK
ENGINE

Check Engine warning light

If the lamp comes on after the engine has started, the diagnostic systems have detected a fault in the fuel/ignition systems, indicating that the engine probably does not fulfil emission control requirements. The vehicle should be checked by an authorized Volvo dealer.



Oil pressure warning light

If the light comes on during driving, the oil pressure is too low. Stop the car and then stop the engine immediately. Do not drive the vehicle. See the section titled "Engine oil". After hard driving, the light may come on occasionally when the engine is idling. This is normal, provided it goes off when the engine speed is increased.



Bulb failure warning light

The light will come on if any of the following bulbs are defective:

one of the low beam headlights

one of the tail lights

one of the brake lights when the brake pedal is depressed.

Check the fuse and bulb.

See sections titled "Replacing bulbs" and "Fuses".

Should the warning light come on after a defective outside bulb has been replaced, the corresponding bulb on the other side of the car should also be replaced.

PARK
BRAKE

Parking brake reminder light

This light will be on when the parking brake (hand brake) is applied. The parking brake lever is situated between the front seats.

BRAKE

Brake failure warning light

If the light comes on while driving and the brake pedal can be depressed further than normal, it is an indication that one of the brake circuits is not functioning.

Stop immediately, open the hood and check the brake fluid level (see section "Brake fluid, power steering").

WARNING!

If the level is below the MIN mark in either section of the reservoir: Do NOT drive. Tow the car to shop for check/repair of brake system.

Fluid level between MIN and MAX mark: proceed immediately and with caution to a Volvo dealer for an inspection of the brake system.

pg. 12 Warning lights



Anti-lock Brake System (ABS)

ABS brakes are designed to prevent the brakes from locking under severe braking conditions. If the light comes on while driving, there is a malfunction of the ABS system (the standard braking system will still function), and the car should be driven to an authorized Volvo dealer for inspection. The system "senses" when the brakes begin to lock, regulates the brake pressure and thereby helps prevent the brakes from locking. When the system is activated, you may be aware of a slight vibration in the brake pedal. The switching sound of the control unit in the engine compartment may also be audible. This is quite normal.

Note that the ABS system does not increase the total braking capacity of your car. It does, however, enable you to steer and helps to retain better control of the vehicle.



(SRS) Supplemental Restraint System

If the light comes on (or stays on after the vehicle has started), the SRS diagnostic system has detected a fault. Drive to an authorized Volvo dealer for inspection. (See section "SRS" for further information.)



Service reminder indicator

This light will come on at 5,000 mile (8,000 km) intervals. It is a reminder to the driver to have the engine oil and oil filter changed. The light will stay on 2 minutes after the start until reset by the servicing dealer.



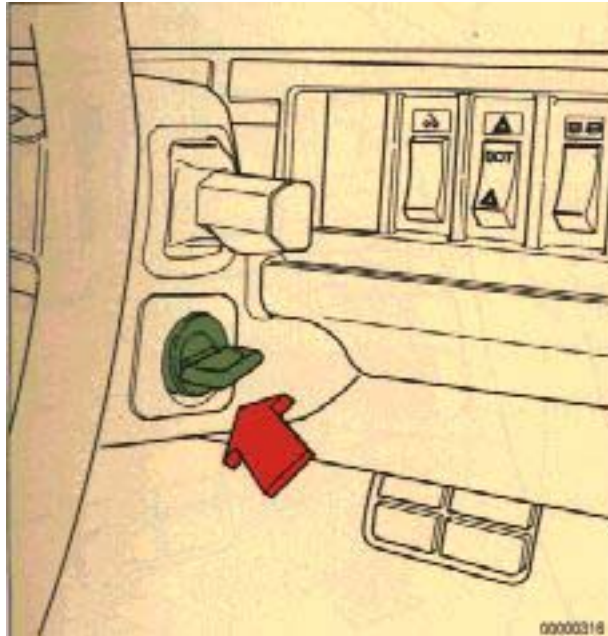
Turn signal indicators - trailer (certain models)

When towing a trailer, this light will flash simultaneously with the turn signals on the trailer. If the light does not flash when signaling, the trailer turn signals are not functioning.



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pg. 13 Steering wheel adjustment, starting (ignition) switch



Starting (ignition) switch/steering wheel lock

The steering wheel lock might be under tension when the car is parked. Turn the steering wheel slightly to free the ignition key.

A chime will sound if the starting key is left in the ignition lock and the front door on the driver's side is opened.



0 Locked position:

remove the key to lock the steering wheel.

I Intermediate position:

certain circuits (heater blower, cigarette lighter, accessories etc.) on.

II Drive position:

key position when engine is running.

III Starting position:

release the key when the engine starts. The key returns automatically to driving position.

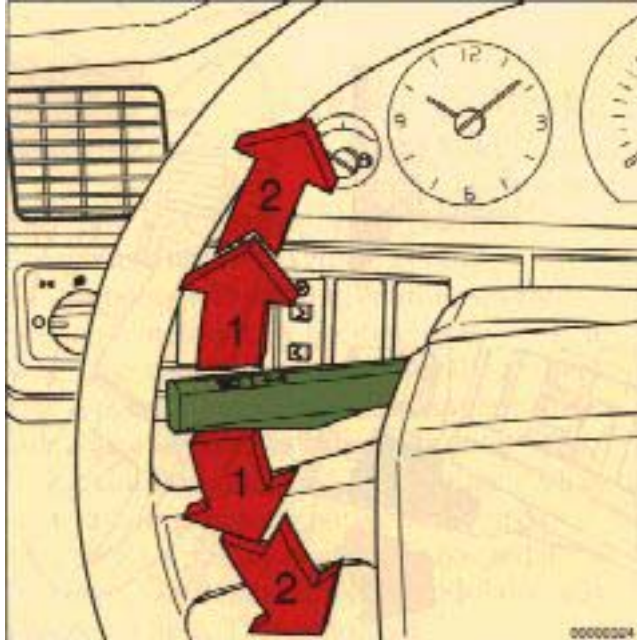
Steering wheel adjustment

The steering wheel can be adjusted to 3 different positions.

Move the control on the left side of the steering column downward and hold it in place. Adjust the steering wheel to the position desired. Release the control and check that the steering wheel is locked in position.

WARNING! Do not adjust the steering wheel while driving.

pg. 14 Turn signals, Hazard warning flasher

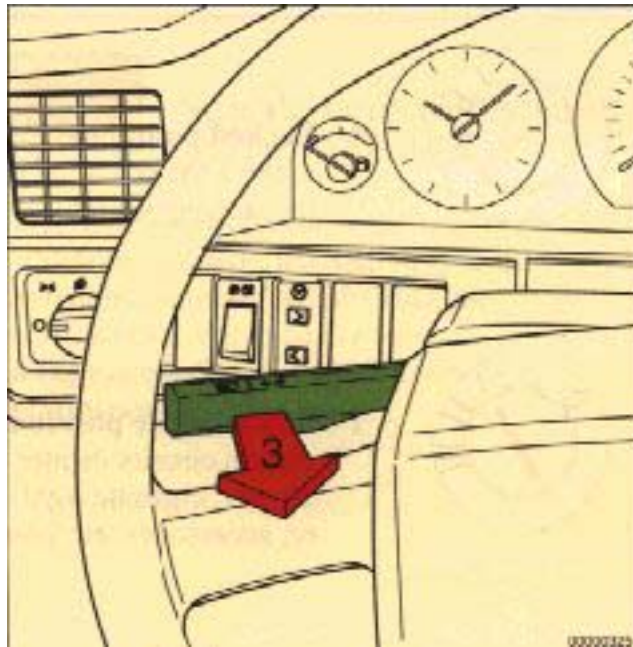


Turn signals

1 Lane change position : In maneuvers such as lane changing, the driver can flash the turn signals by moving the turn signal lever to the first stop and holding it there. The lever will return to the neutral position when released.

2 Signal lever engaged for normal turns

Note: Defective turn signal bulb will cause turn signal indicator and remaining signal lights to flash more rapidly than normal.

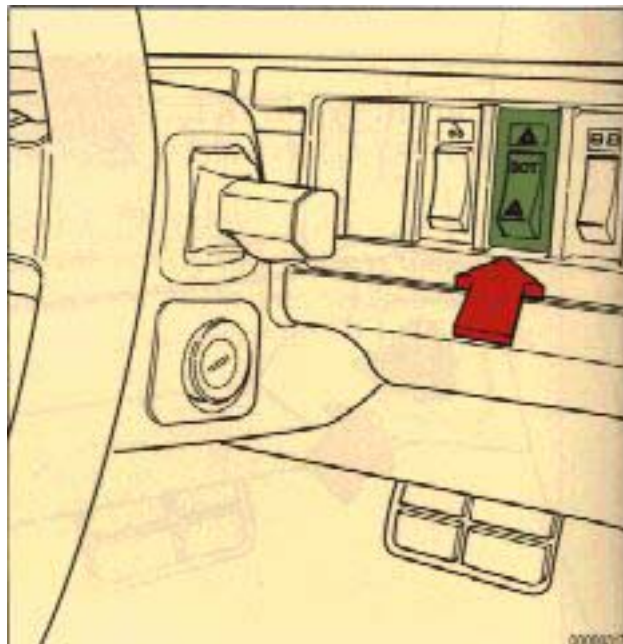


3 High beam/low beam switch (headlights on)

Move the lever towards the steering wheel past the headlight flasher position and release it.

3 Headlight flasher (headlights off)

Move the lever towards the steering wheel past the headlight flasher position and release it

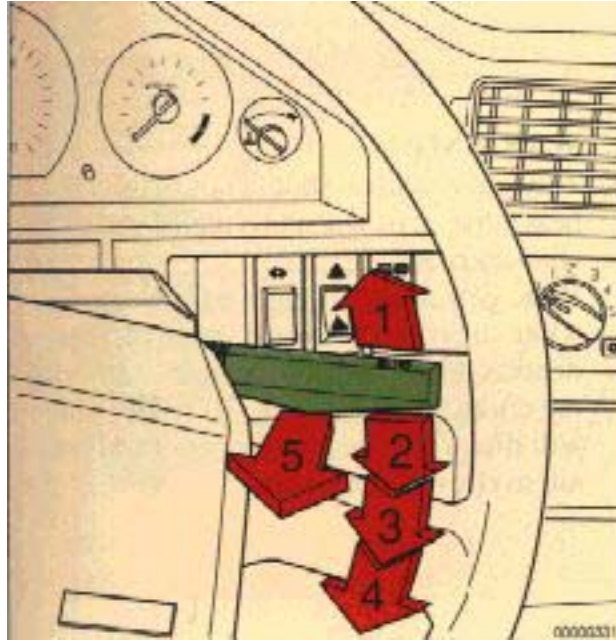


Hazard warning flasher

The four-way flasher should be used to indicate that the vehicle has become a traffic hazard.

NOTE: Regulations regarding the use of the hazard warning flasher may vary from state to state.

pg. 15 Windshield, Tailgate wipers/washers



Wiper/washer

1 Intermittent wiper.

With switch in this position, the wipers will sweep approximately every seventh second.

2 "Single sweep" position.

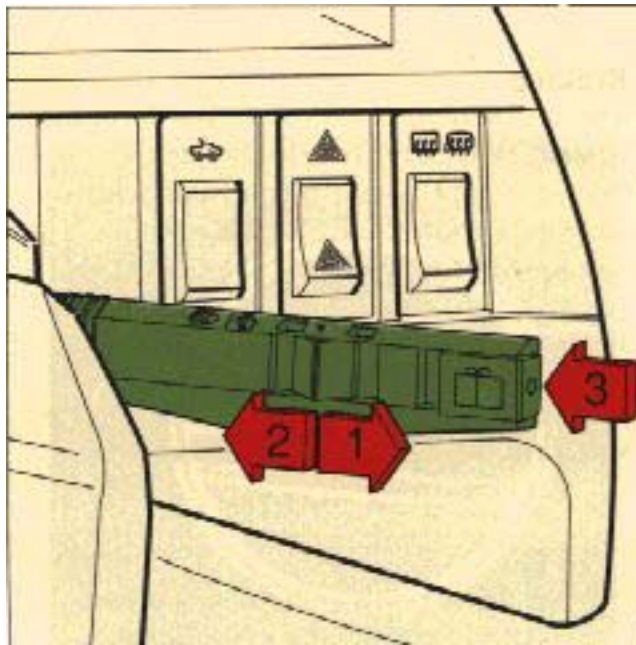
Switch returns automatically when released

3 Wipers, low speed.

4 Wipers, high speed

5 Windshield wiper/washer

The wiper will make 2-3 complete sweeps after lever is released.



Tailgate window wiper/washer
(wagon)

The tailgate window wiper/washer is operated by a switch at the end of the wiper lever.

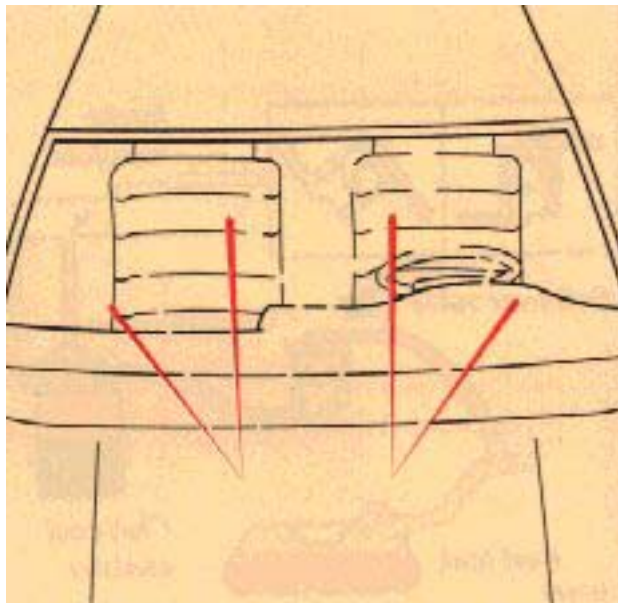
1. The wiper operates continuously.

2. Intermittent position: the wiper strokes approximately every 10 seconds.

3. Tailgate washer (note that the wiper also operates when this button is depressed):

After the button is released the wiper strokes 2-3 additional times before stopping.

The electrical circuit is protected by fuse 19, located in the central electrical unit. See the section entitled "Fuses".



Adjusting washer nozzles

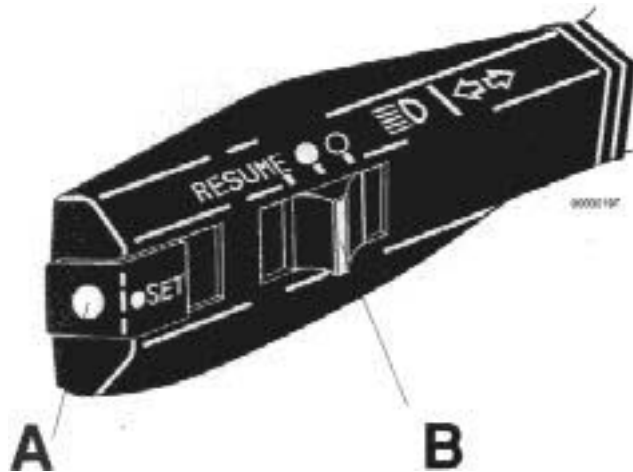
The washer jets should spray the windshield as shown. Use the edge of a small screwdriver to adjust the nozzles, if necessary.

Washer fluid reservoir

The washer fluid reservoir is located in the engine compartments and holds approx. 0.5 US gal. (2 liters) - sedans and 0.8 US gal (3.2 liters) - wagons.

During cold weather, the reservoir should be filled with windshield washer solvent containing anti-freeze.

pg. 16 Cruise control



Cruise control

The cruise control switches are located on the turn signal switch lever.

To engage and set desired speed:

- Set switch (B) to .
- Accelerate to desired cruise speed.

NOTE: The cruise control cannot be engaged at speeds below 22 mph (35 km).

- Depress SET button (A).

Braking

This will automatically disengage the cruise control. Previously selected cruise control speed is retained in the memory and by momentarily setting the switch to RESUME position that speed will be re-engaged.

If the cruise control is already engaged, the cruising speed can be increased by depressing the SET button (A). The vehicle will then maintain the current speed.

NOTE:
When driving on a grade, actual vehicle speed may vary slightly from the set cruise control speed.

Acceleration

Momentary acceleration, such as for passing, does not interrupt cruise control operation. The previously selected speed will be maintained without having to set switch to RESUME.

To disengage the cruise control system : set switch (B) to position  , or depress the brake pedal. Switching off the starting (ignition) switch will automatically disengage the cruise control system.

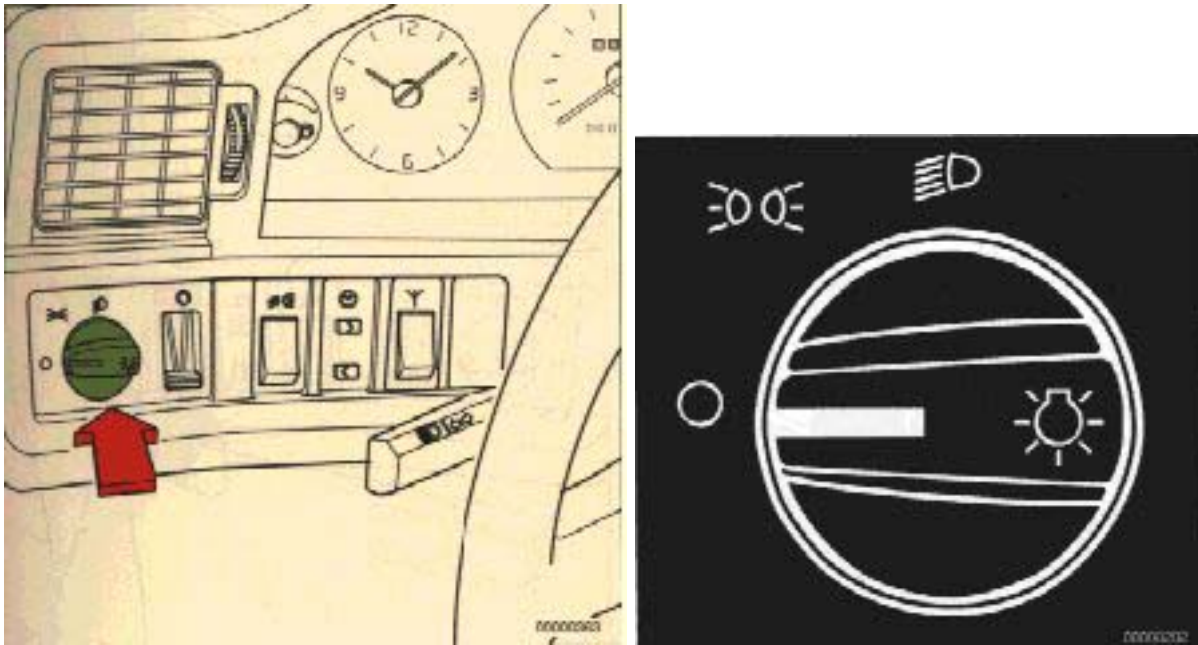
WARNING! The cruise control should not be used in heavy traffic or when driving on wet or slippery roads.

If the gear shift is moved to Neutral while the cruise control is engaged, then depress the brake pedal momentarily, or set the cruise control switch (B) to  . This will disengage the cruise control and prevent overrevving the engine.



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pg. 17 Rear fog lights, Front fog lights, Lighting



Headlights and parking lights

 All lights off *

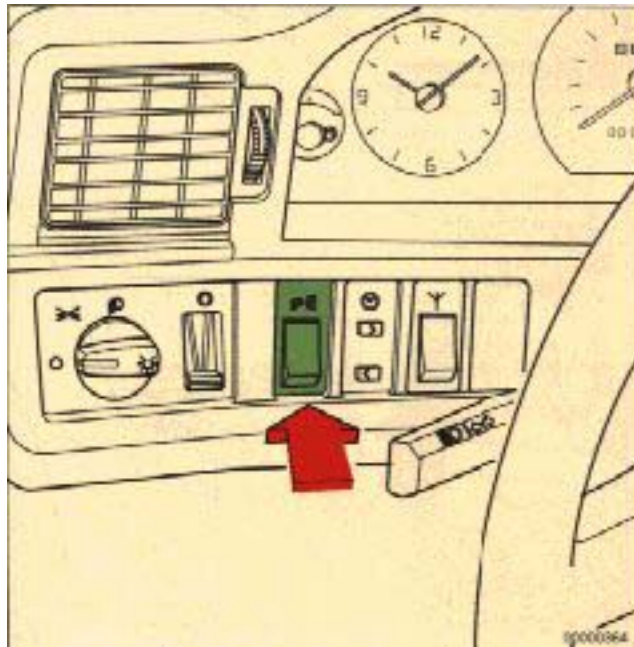
 Parking lights ON. With the headlight switch in this position, the parking lights will stay ON.

 Headlights and parking lights are ON, if starting (ignition) switch is in position I or II. If the headlight switch is in this position, all lights will go out when the starting (ignition), switch is turned OFF. Change from high to low beam (and vice versa) by moving the turn signal switch lever on the left side off the steering column toward the steering wheel.

Canada only: (On models with day running lights)

The low beams will come on automatically when the engine is started.

The high beams can only be switched on if the headlight switch is in position  .



Front and rear foglamps

The switch has two settings:

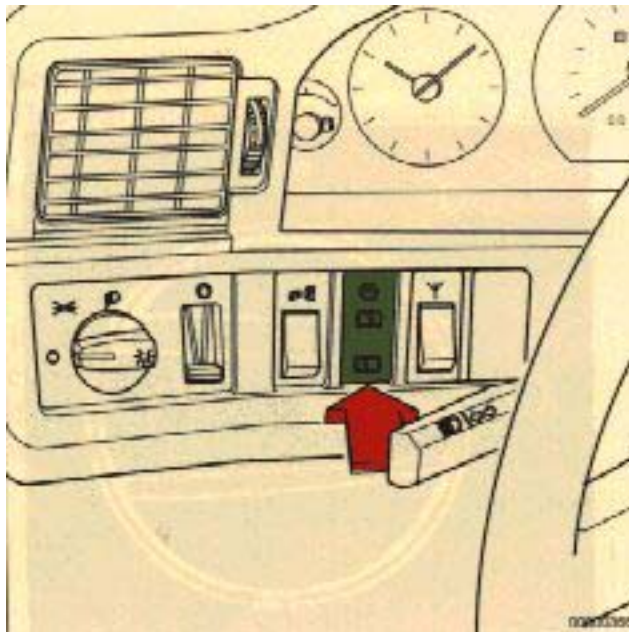
- 1) Front foglights ON.
- 2) Front and rear foglamps ON.

When both front and rear foglamps are turned on both indicators lamps will light. The rear fog lights are considerably brighter than the normal tail lights and should be used only when atmospheric conditions, such as fog, rain, snow, smoke or dust reduce the daytime or nighttime visibility of other vehicles to less than 500 ft. (152 meters). The low-beam headlights must be switched on . Note that local regulations governing the use of these lights may vary.



Instrument illumination

To increase the brightness, move the slide switch up.
To decrease the brightness, move the slide switch down.



Setting clock

> Forward

< Backward



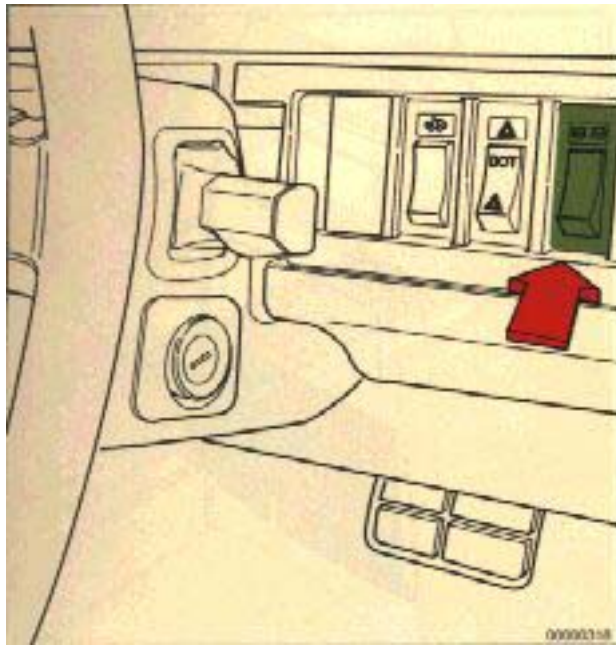
Power antenna

The power antenna switch can be used to retract the antenna when the audio system is turned on. This will permit operation of the cassette drive with the antenna in the down position.

CAUTION: Always lower the antenna when entering a garage or car wash to avoid antenna damage.

The antenna mast should be cleaned and lubricated at every oil change 5000 miles (8000 km).

pg. 19 Rear window demister, Heated front seats

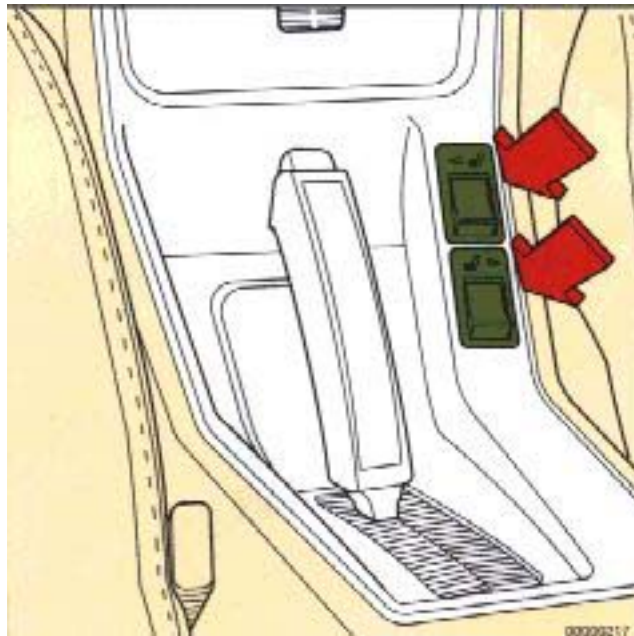


Rear window demister, heated side-view mirrors

Depress the switch to start heating of rear window and side mirrors. Both orange control lights in the switch will illuminate. A timer switches off the side mirror heating after approx. 6 minutes and the rear window demister after 12 minutes. The control lights go out correspondingly.

Depressing the switch while any control light is on will disengage all heating. Depressing the switch after the control lights have gone out will restart the heating cycle.

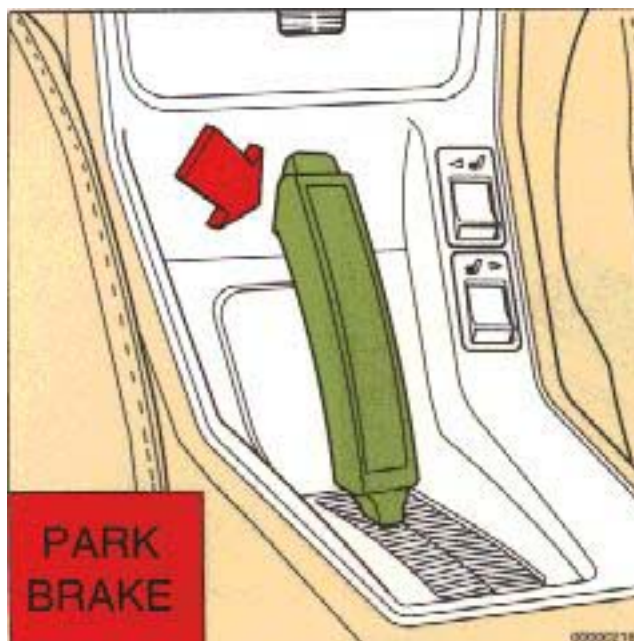
CAUTION: Do not place items that may damage the printed circuit against the inner surface of the rear window.



Heated front seats

The heated front seats can be switched on and off as required. When switched on, the system senses the ambient temperature and regulates the level of heat applied. When the optimum temperature is reached, the heating is switched off automatically. The passenger seat is only heated when occupied.

pg. 20 Parking brake, Cigarette lighter, Ash trays



Parking brake (hand brake)

The lever is situated between the front seats. The brake is applied to the rear wheels.

WARNING!

Always use the parking brake (hand brake) when parking. On hills, also turn the front wheels toward the curb.

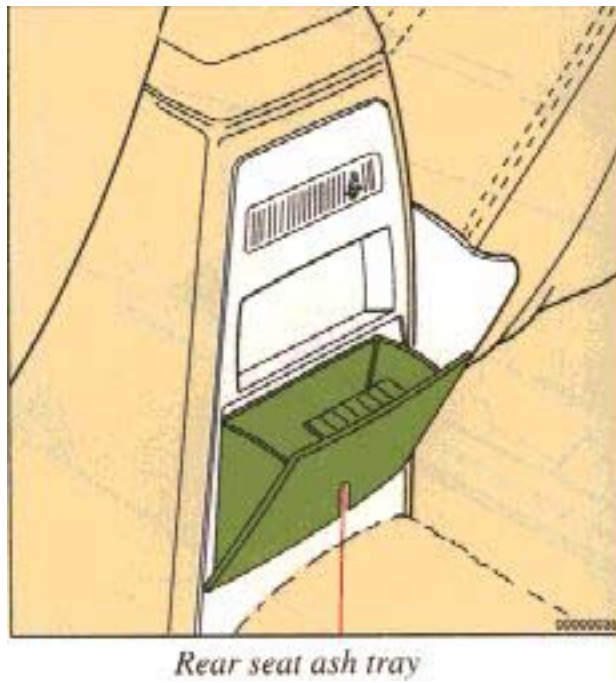
In order to obtain the best possible performance of the parking brake, the brake linings should be broken in (See section titled "Break-in period").



Cigarette lighter

To operate, depress the knob fully. When the knob automatically releases, the cigarette lighter is ready for use.

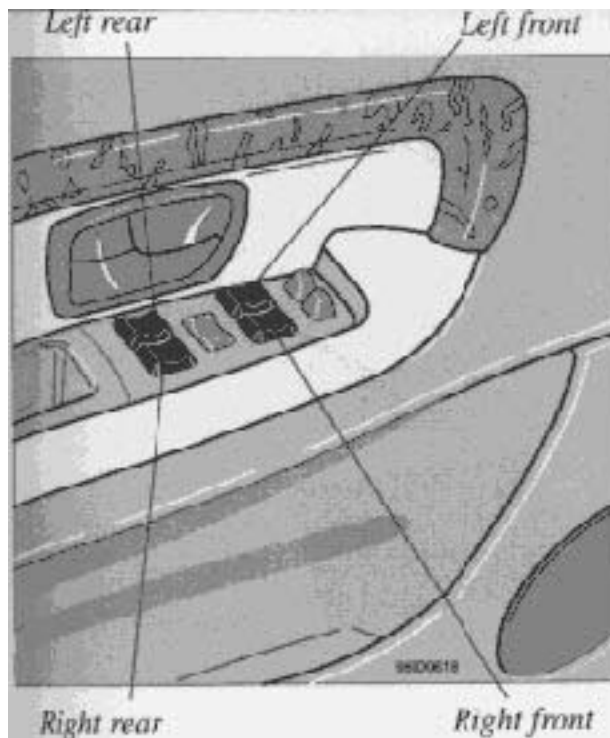
The starting (ignition) switch must be switched on (to position I or II) for the cigarette lighter to function.



Ash trays

To remove the ash trays depress the center spring and remove.

pg. 21 Electrically operated windows



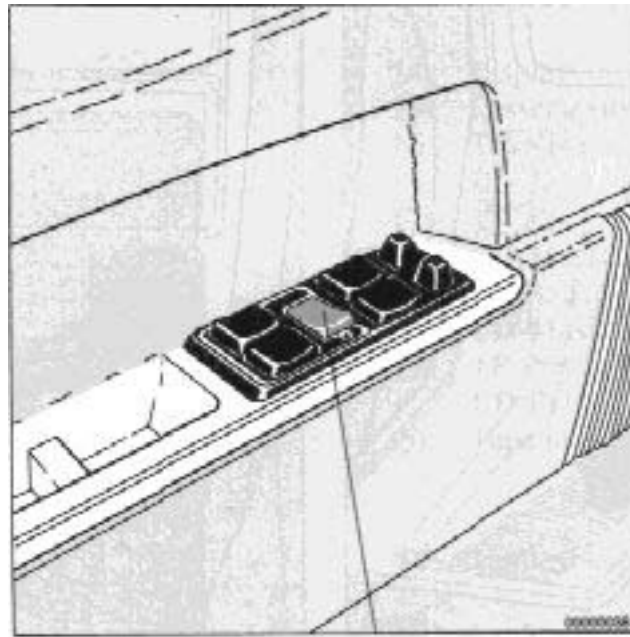
Electrically-operated windows

The electrically operated windows are controlled by switches from the driver's armrest as shown in the above illustration.

The starting (ignition) switches must be ON (position II) for the electrically operated windows to function. The window is lowered if the rear part of the switch is pressed and raised if the front part of the switch is pressed.

WARNING! Remove the starting (ignition) key when children are left unattended in the vehicle.

NOTE: The power window motors have an overload protecting circuit breaker which is activated when an object blocks a window. Should this occur, remove the object and wait 20 seconds for the circuit breaker to reset. The power windows should then function normally.



Switch

Cut-out switch for electrically-operated rear-door windows

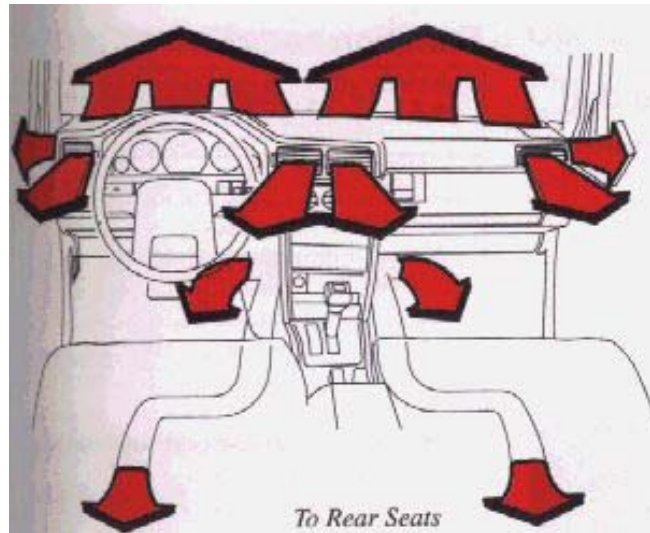
If the car is equipped with rear door windows, this function can be disabled by a switch located on the driver's door armrest. This switch is positioned 90° in relation to the other switches.

● The rear door windows can be raised or lowered with the respective door switch as well as the switch on the driver's door.

○ The rear door windows cannot be raised or lowered with the respective door switch but instead only with the corresponding switch on the driver's door.



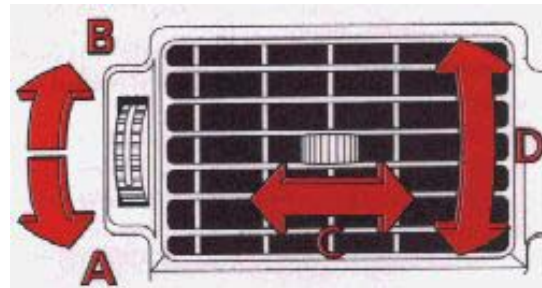
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ECC - Electronic Climate Control

This is an automatic system that also permits manual operation. The in-car temperature is automatically monitored by two sensors located in the passenger compartment.

One sensor is located on the top of the dashboard where it can sense sunlight. The second sensor is located on the courtesy light fixture where it can sense the temperature in the center of the car. The following pages describe how ECC works and how it can be used most effectively.



Air louvers (dash)

- A Open
- B Closed
- C Directing air flow horizontally
- D Directing air flow vertically

Fan 0=off 5 = max speed aut = fan speed automatically regulated	Function selector aut = Set desired function	Temperature dial Set desired temperature
		
 Air in the passenger compartment recirculates. Will not function in defrost setting. Light is on when function is engaged.	 Air conditioning disengaged when this button is in the depressed position. The light has two functions: • air conditioning disengaged • fault in system	

Function selector

aut aut=air distribution automatically regulated



Air through panel vents



Defrost. Air to windshield and side windows.



Air to floor, windshield and side windows.



Air through floor vents.

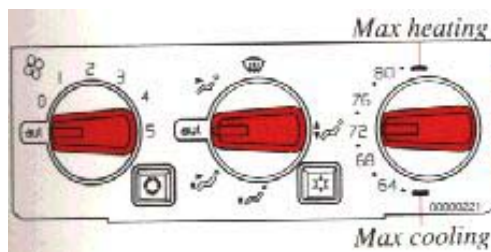


Bi-level. Air through floor and panel vents. Air supplied from panel vents is lightly colder than air released at foot level.

pg. 24 Heating and ventilation

Automatic setting

The ECC system will automatically maintain a comfortable in-car temperature regardless of the outdoor temperature.



Select the desired temperature

The fan will run at its maximum speed in either the max cooling or max heating positions.

Optimum defrosting



Set the function dial to .

The air conditioning light will go on, even if the button is not depressed, to indicate that the air conditioning system is also activated to dehumidify the air.

When the windows have cleared, set the fan control to position 2.

NOTE:

The air conditioning compressor only engages at temperatures above 41° F (5° C).
Always keep the air intake grille at the base of the windshield free of snow.

Operating Tips

*When the outside air is contaminated with exhaust gases, smoke etc. (as when driving through a tunnel), push the recirculation



button. In this position, very little air is drawn into the passenger compartment from outside. However, do not leave the system in this mode for more than 10-15 minutes, since the air inside the car will become stale and the windows may fog.

NOTE: Do not place any objects over the sensor in the passenger side speaker grille as this will cause the ECC system to respond incorrectly to ambient conditions.

ECC system fault indication 

If the light in the air conditioning push button begins to flash when the ignition is switched on, a simple fault is indicated. The system will compensate by substituting a standard value stored in the memory. System performance loss will be slight. If the light continues to flash more than 20 seconds, a more serious fault is indicated. While the system will again attempt to substitute a standard value, some reduction in system performance will become apparent. Contact your authorized Volvo dealer for service.

pg. 25 Audio Cassette/Tuner controls and indicators

Operating instructions

For complete operating instructions, maintenance guidelines, and specifications, please consult your Audio Cassette/Tuner Instruction Booklet. The Booklet also contains information on radio reception and the radio antenna.

Radio antenna mast

NOTE: Always lower the antenna mast when entering an automatic car wash.
The antenna should be cleaned and lubricated every 5,000 miles (8,000 km).

Multipath Distortion

FM Signals are typically "line-of-sight", and very reflective. Their reflectivity to objects such as buildings, mountains, even other passing vehicles, causes the condition known as multipath distortion. This distortion is the result of the reflected signal, and the direct signal reaching your antenna at slightly different times causing a cancellation of all signals. This condition will sound like hissing, or static. Very little can be done to eliminate this problem, however, lowering the treble on your radio could help mask these disturbances thereby allowing you to achieve optimum pleasure from your audio system.

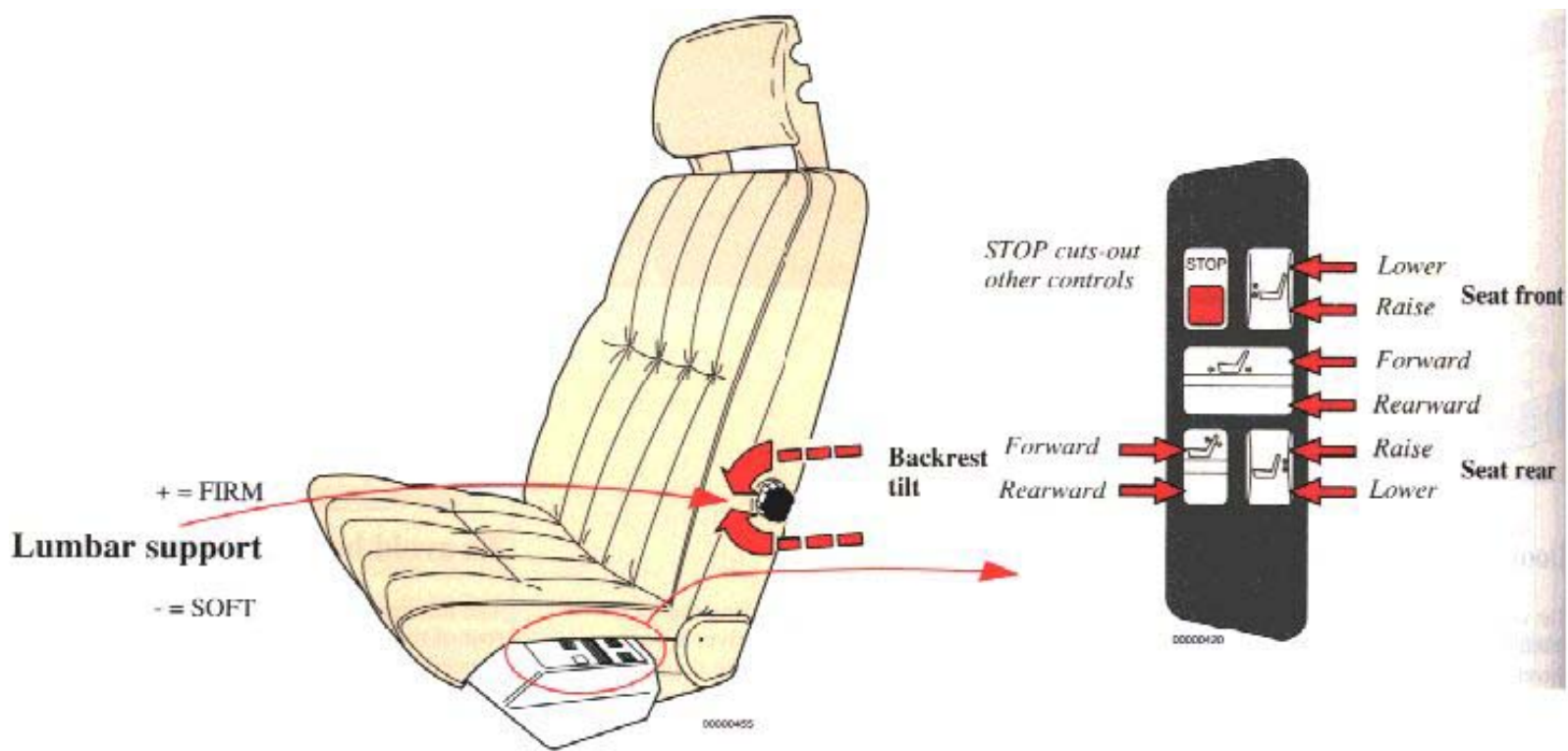
pg. 26 Front seats

Electrically operated front seats

The front seats are electrically operated. using the switches on the side of the seats you can adjust:

- the height of the seat (rear)
- the height of the seat (front)
- the forward-backward movement
- the backrest tilt

NOTE: The electrically operated front seats have an overload protector which engages if an object blocks either of the seats. If this happens remove the object and wait 20 seconds. The overload protector should then have cooled down and the power seats should function normally.



WARNING:
Do not adjust seat while driving.
The seat should be adjusted so that the brake pedal can be depressed fully.



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Body and interior

pg. 27 Body and interior

The sun roof, seat belts, etc. are described on the following pages.

[pg. 28](#) Rear-view/side-view mirrors

[pg. 29](#) Interior light, sun roof

[pg. 30](#) Child safety

[pg. 32](#) Seat belts

[pg. 34](#) Supplemental Restraint System

[pg. 36](#) Doors and locks

[pg. 38](#) Trunk, spare tire, jack, long load storage (sedan)

[pg. 39](#) Hood

[pg. 40](#) Passenger compartment, storage spaces

[pg. 41](#) Station wagon tailgate, storage spaces

[pg. 43](#) Folding rear seat (wagon)

[pg. 45](#) Cargo space lighting, spare tire, jack (wagon)

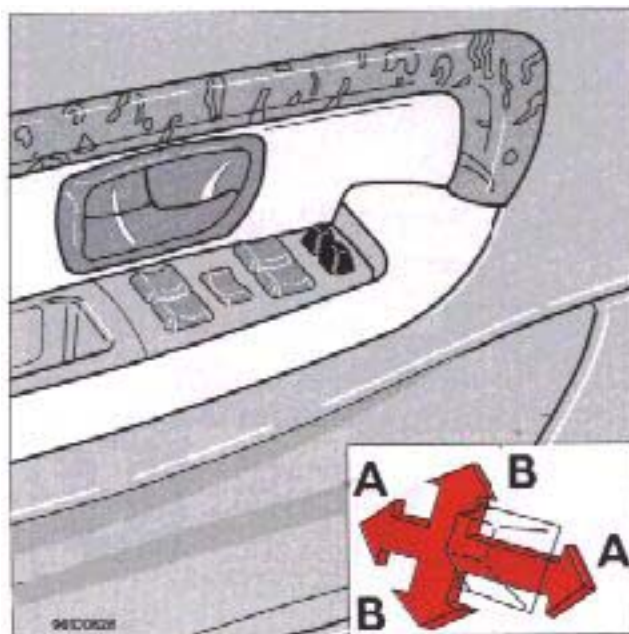
pg. 28 Rear-/side-view mirrors, Vanity mirror



Rear-view mirror

- A Normal position
- B Night position, reduces glare from following headlights

CAUTION: Never use ice scrapers made of metal as they can easily scratch the mirror surface.



Control switches

Electrically-operated side-view mirrors

The control switches are located in the driver's door armrest.

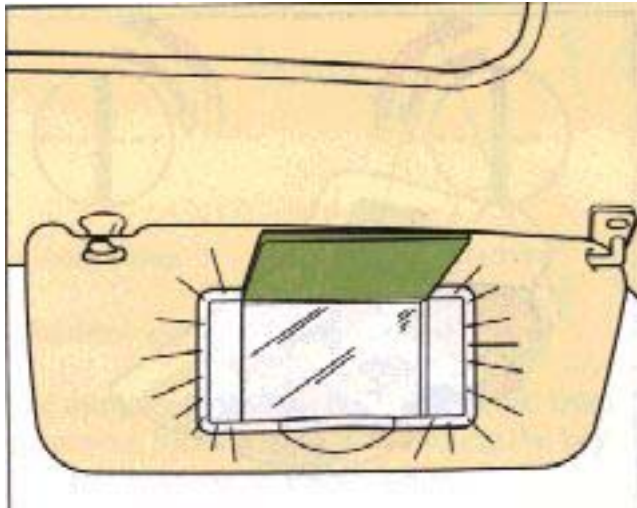
A Adjustment sideways

B Adjustment up/down

WARNING!

Objects seen in the wide-angle right side-view mirror are closer than they appear to be.

The mirrors should always be adjusted prior to driving.

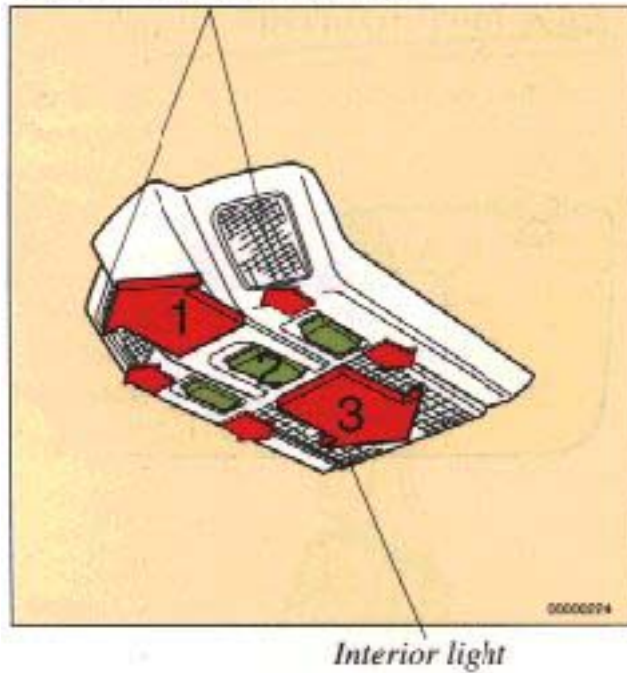


Vanity mirror

The make-up mirror is located on the right-side sun visor.

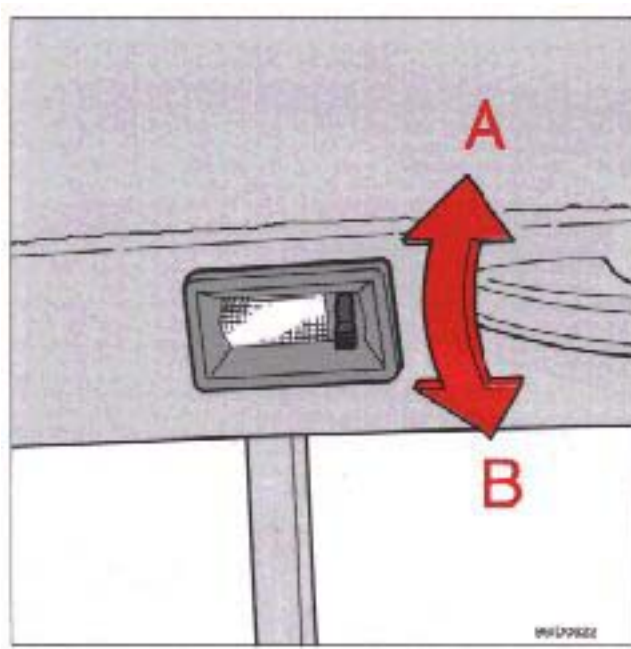
Both lamps light up when the cover is opened.

Reading lights for front seats



Interior light

- 1 Light always on.
- 2 Light always off
- 3 Light is on when either of the front or rear doors are opened.



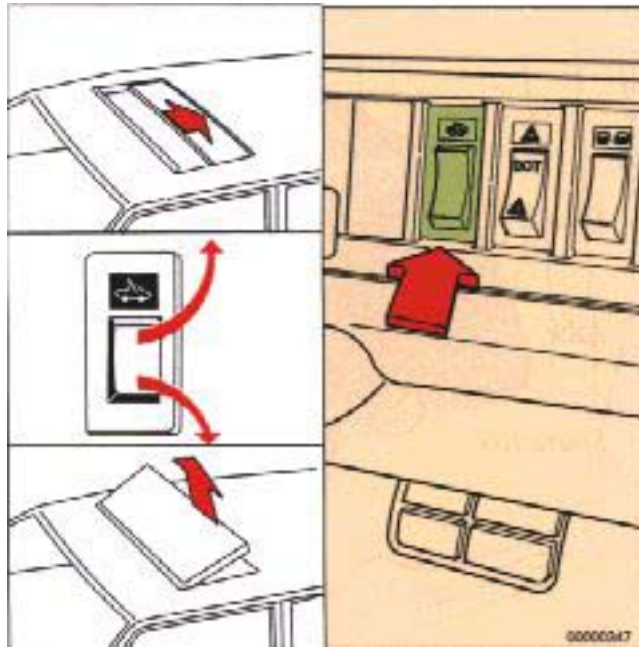
Rear reading lights

Rear seat passengers can turn the rear reading lights on or off by using the adjacent switches.

A ON

B OFF

NOTE: In case of a sun roof malfunction, see "Emergency sun roof operation".



Electrically-operated sun roof

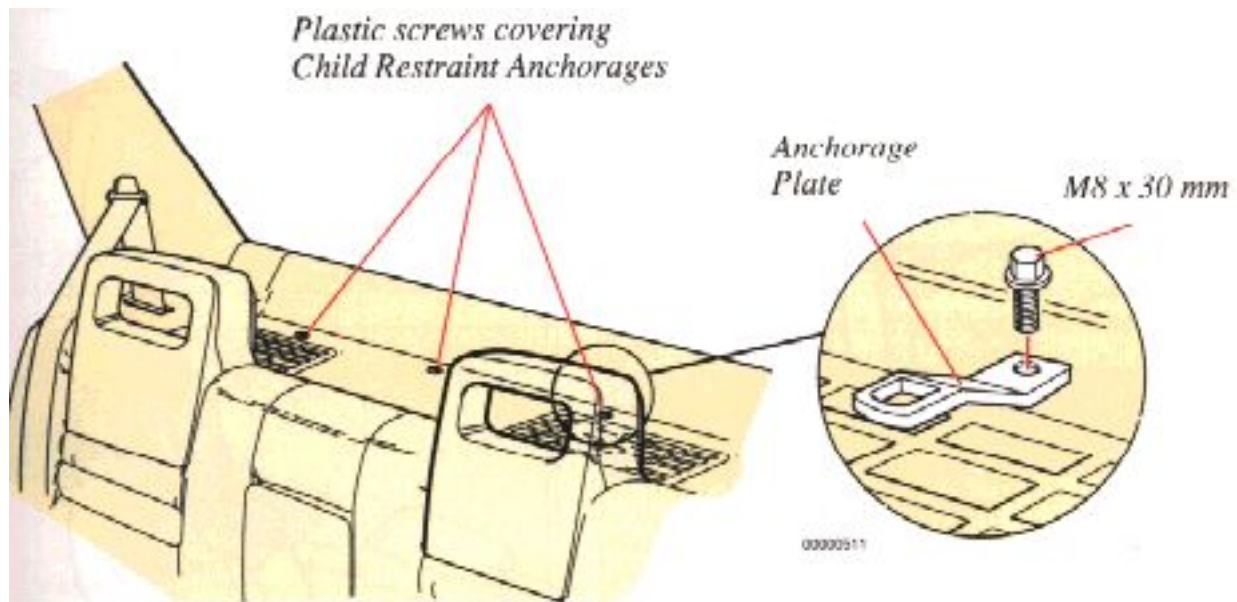
The switch for operating the sun roof is located on the instrument panel. The starting (ignition) key must first be turned to the drive position.

The sun roof can be operated in two ways; as a conventional sliding roof; or the rear edge can be raised to provide increased ventilation. To open the sun roof as a sliding roof, depress the top portion of the switch. To raise the rear edge of the sun roof, depress the bottom portion of the switch.

To close the sun roof, depress the side of the rocker switch opposite the side used to open the roof.



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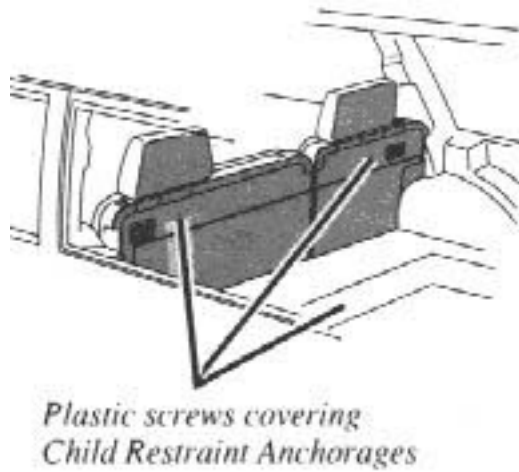


Child Restraint Anchorages

Volvo cars are fitted with Child Restraint Top Tether Anchorages in the rear seat. There are three anchorages under the rear section of the car's rear window shelf on sedans and on the back rest on wagons. The backrest on wagons must be folded down slightly to reach the anchorages. When the car is delivered, the holes for these anchorages are covered by plastic covers. In cars designated for Canada, one top tether anchorage set will be in the glove box. The top tether anchorage set includes the top tether anchorage plate, an M8 bolt 30 mm (1.18") long and a plastic trim cover. If another set is needed, consult your Volvo dealer.

Installing the top tether

Remove the plastic cover on the anchorage point you want to use. This can be done with a suitable coin. The screw is removed counter-clockwise. Place the top tether anchorage plate as shown in the illustration. Using the M8 bolt, tighten securely, to 16+/- 2.5 ft-lb. Place the plastic trim plate over the anchorage plate, if desired.



WARNING! Child Restraint Anchorages are designed to withstand only those loads imposed by correctly fitted Child Restraints. Under no circumstances are they to be used for adult seat belts or harnesses.

The anchorages are not able to withstand excessive forces on them in the event of collision if full harness seat belts or adult seat belts are installed to them. An adult who uses a belt anchored in a Child Restraint Anchorage runs a great risk of suffering severe injuries should a collision occur.

Child safety

Volvo recommends the proper use of restraint systems for all occupants including children. Remember that, regardless of age and size, a child should always be properly restrained in a car.

Restraint systems for children are designed to be secured in the vehicle by lap belts or the lap portion of a lap-shoulder belt. Such child restraint systems can help protect children in cars in the event of an accident only if they are used properly. However, children could be endangered in a crash if the child restraints are not properly secured in the vehicle.

Failure to follow the installation instructions for your child restraint can result in your child striking the vehicle's interior in a sudden stop. Holding a child in your arms is NOT a suitable substitute for a child restraint system. In an accident, a child held in a person's arms can be crushed between the vehicle's interior and an unrestrained person. The child could also be injured by striking the interior, or by being ejected from the vehicle during a sudden maneuver or impact. The same can also happen if the infant or child rides unrestrained on the seat. Other occupants should also be properly restrained to help reduce the chance of injuries or increasing the injury of a child.

All states and provinces have legislation governing how and where children should be carried in car. Find out the regulations existing in your state or province. Recent accident statistics have shown that children are safer in rear seating positions than front seating positions when properly restrained.

A child restraint system can help protect a child in a vehicle. Here's what to look for when selecting a child restraint system:

It should have a label certifying that it meets applicable Federal Motor Vehicle Safety Standards (FMVSS 213-80) - or in Canada, CMVSS 213.

Make sure the child restraint system is approved for the child's height, weight and development - the label required by the standard or regulation, or instructions for infant restraints, typically provide this information.

In using any child restraint system, we urge you to look carefully over the instructions that are provided with the restraint. Be sure you understand them and can use the device properly and safely in this vehicle. A misused child restraint system can result in increased injuries for both the infant or child and other occupants in the vehicle.

If your child restraint requires a top tether strap, consult your authorized Volvo dealer for top tether anchorage and installation information.

When a child has outgrown the child safety seat (approximately age 4-5 years, depending on size) you should use the rear seat with the standard seat belt fastened. The best way to help protect the child here is to place the child on a cushion so that the seat belt is properly located on the hips.

A specially designed and tested safety cushion for this purpose can be obtained from your Volvo dealer. If necessary, an extra seat is available for use in the luggage compartment of station wagon models. This seat is designed for two children, each up to 88 lbs. and up to 53 inches in height.

pg. 32 Seat belts



Seat belts

Always fasten the seat belts before you drive or ride.

Two lights above the rear view mirror will be illuminated for 4-8 seconds after the starting (ignition) key is turned to the driving position. One light is located in the instrument panel and one in the console between the front seats.

A chime will sound at the same time if the driver has not fastened his seat belt. The rear seats are provided with self-retracting inertia reel belts. The front seats are provided with twin roller belts.

To buckle:

Pull the belt out far enough to insert the latch plate into the receptacle (buckle for rear seats) until a distinct snapping sound is heard.

The seat belt retractor is normally "unlocked" and you can move freely, provided that the shoulder belt is

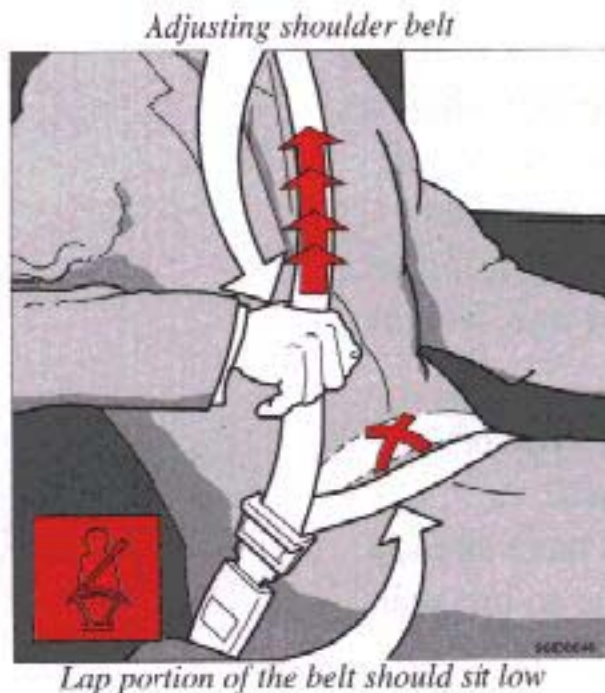
not pulled out too far. The retractor will lock up as follows:

- if the belt is pulled out rapidly
- during braking and acceleration
- if the vehicle is leaning excessively
- when driving in turns



In order for the seat belt to provide maximum protection in the event of an accident, it must be worn correctly. When wearing remember:

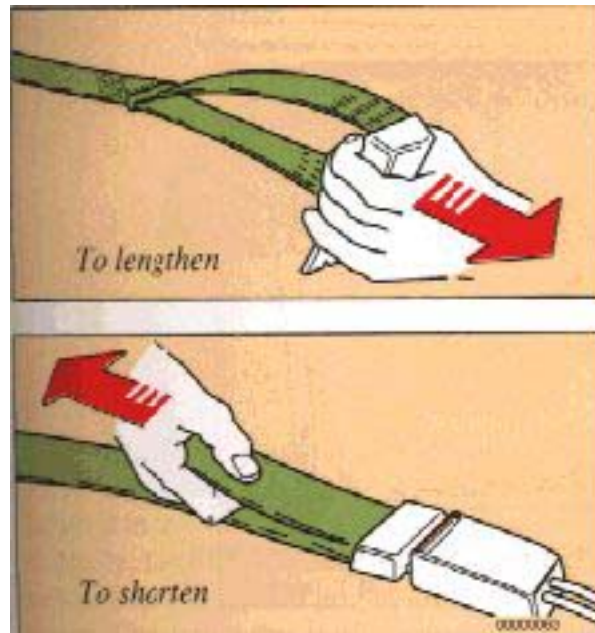
- The belt should not be twisted or turned.
- The lap belt must be positioned low on the hips (not pressing against the abdomen). Make sure that the shoulder belt is rolled up into its retractor and that the shoulder and lap belts are taut.



To unfasten, depress red pushbutton in receptacle (buckle) and let the belts rewind into their retractors.

Before exiting the car, check that the seat belt retracts fully after being unbuckled. If necessary, guide the belt back into the retractor slot.

pg. 33 Seat belts (cont.)



Center-rear belt adjustment

The center-rear seat belt is manually adjustable. It should always be adjusted to fit snugly across the lap.

Maintenance

Check periodically that the anchor bolts are secure and that the belts are in good condition.

Use water and a mild detergent for cleaning.

Check seat belt mechanism function as follows:

Attach the seat belt. Pull rapidly on the strap.

In the above checks you should not be able to pull the belt out.



During pregnancy

Pregnant women should always wear seat belts. Remember that the belt should always be positioned in such a way as to avoid any possible pressure on the abdomen. The lap portion of the belt should be located low, as shown in the above illustration.

NOTE:

Legislation in your state or province may mandate seat belt usage.

WARNING! Never use a seat belt for more than one occupant.

Never wear the shoulder portion of the belt under the arm, behind the back or otherwise out of position.

Such use could cause injury in event of accident.

As the seat belts lose much of their strength when exposed to violent stretching, they should be replaced after any collision, even though they may appear to be undamaged.

Never repair the belt on your own; have this done by an authorized Volvo dealer only.



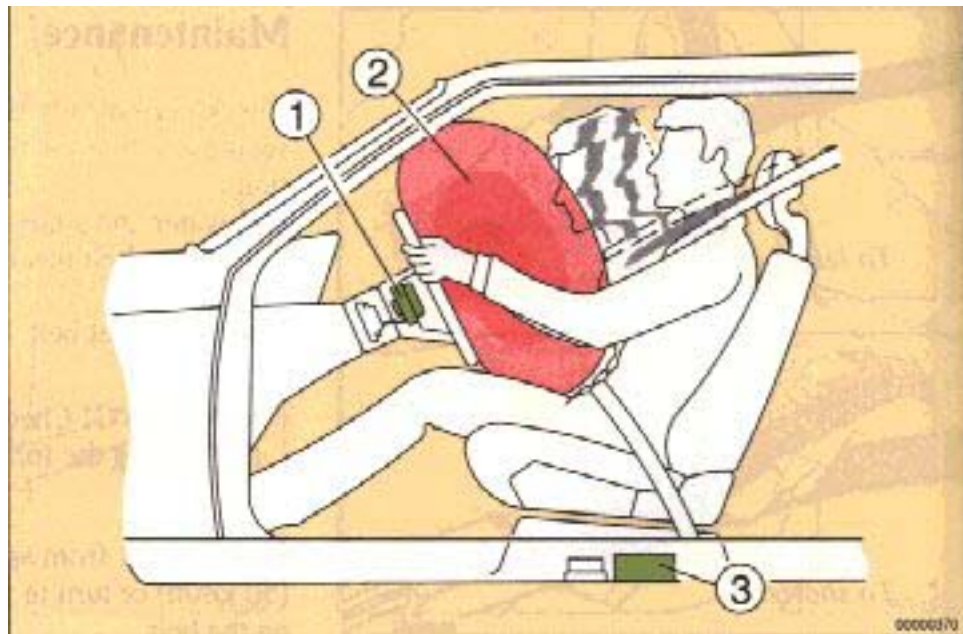
As an enhancement to the three-point seat belt system, some 1990 Volvos are equipped with a Supplemental Restraint System (SRS). The Volvo SRS consists of a driver's side airbag with a driver's side knee bolster. The system is designed to supplement the protection provided by the three-point seat belt system.

The interior of an SRS-equipped Volvo looks very much the same as any other. The only indications of the system's presence are the "SRS" embossed on the steering wheel pad, and the knee bolster beneath the steering column.

The airbag is folded and located in the center of the steering wheel. It is released only during certain frontal or front-angular collisions in which the forces sustained by the car are equivalent to an impact into a rigid barrier of approximately 12 mph (19 kph).

WARNING!

As its name implies, SRS is designed to be a SUPPLEMENT to - not a replacement for - the three-point belt system. The airbag is designed not to be released in the event of a side or rear-end collision, or during a rollover situation. For maximum protection, wear seat belts at all times. Be aware that no system can prevent all possible injuries that may occur in an accident.



The airbag system includes a gas generator (1) surrounded by the airbag itself (2). In the event of a frontal or certain front-angular collision in which the forces sustained by the car equivalent to impacting a rigid barrier of approximately 12 mph (19kph), the sensor (3) activates the gas generators causing the airbags to be inflated with nitrogen gas. As the movement of the driver compresses the airbag some of the gas is expelled at a controlled rate to provide better cushioning.

The entire process, including inflation and deflation of the airbags, takes approximately two-tenths of a second.

WARNING!

When installing any optional equipment make sure that the SRS system is not damaged. Do not attempt to service any component of the SRS yourself. Attempting to do so may result in serious personal injury. If a problem arises, take your car to the nearest authorized Volvo Dealer for inspection as soon as possible.



A self-diagnostic system incorporated in the sensor monitors the SRS. If a fault is detected, the "SRS" warning light will illuminate. The light is included in the warning/indicator light cluster in the instrument panel. Normally, the SRS warning lamp will be illuminated along with the other warning/indicator lights when the ignition key is turned to the ON position (position II), and go out a short time after the engine has been started. Check that this light is functioning properly every time the car is started.

The following items are monitored by the diagnostic system:

- Sensor unit electronics integrity
- Reserve energy supply
- Diagnostic output circuit
- System voltage
- Integrity of system connectors
- Mercury switch closure
- Gas generator ignitor

WARNING! If the SRS warning light stays on after the engine has started or if it comes on while you are driving, drive the car to the nearest authorized Volvo Dealer for inspection as soon as possible.

ATTENTION!

THIS CAR IS EQUIPPED WITH A SUPPLEMENTAL RESTRAINT SYSTEM. TO PROVIDE CONTINUED RELIABILITY, CERTAIN ELEMENTS OF THE SUPPLEMENTAL RESTRAINT SYSTEM SHALL BE SERVICED OR REPLACED WITHIN 10 YEARS AFTER THE DATE OF MANUFACTURE APPEARS ON THE CERTIFICATION LABEL (FMVSS-LABEL) LOCATED ON THE LEFT FRONT DOOR, SEE OWNER'S MANUAL FOR FURTHER INFORMATION.
VOLVO

This decal can be found in the center console.

There is no maintenance to perform on the SRS yourself. The only periodic maintenance recommended on the SRS is that the air bag module and the sensor unit should be replaced approximately every ten years and that the other components in the system (wiring, connectors, etc.) should also be inspected at this time. This service must be performed by an authorized Volvo dealer.

Should you have any questions about the SRS system, please contact your authorized Volvo Dealer or Consumer Affairs Department:

In the U.S.A.:

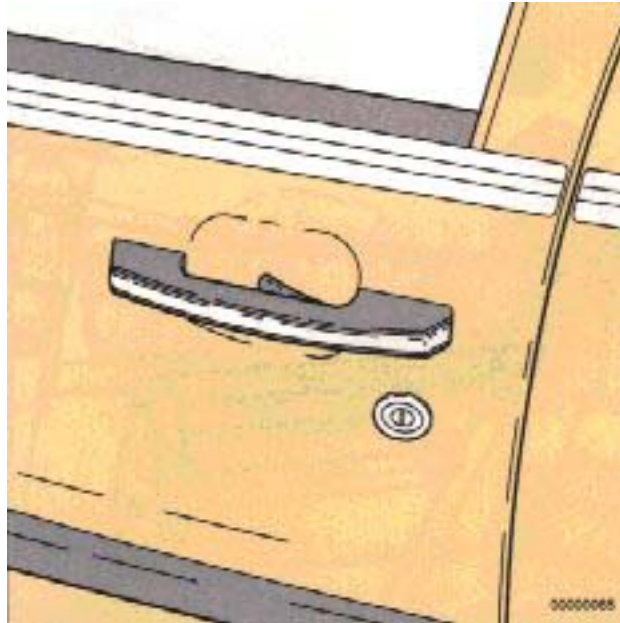
Volvo Cars of North America
One Volvo Drive,
Rockleigh, New Jersey 07647

In Canada:

Volvo Canada Ltd.
175 Gordon Baker Road
Willowdale, Ontario M2H2N7



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Door locks

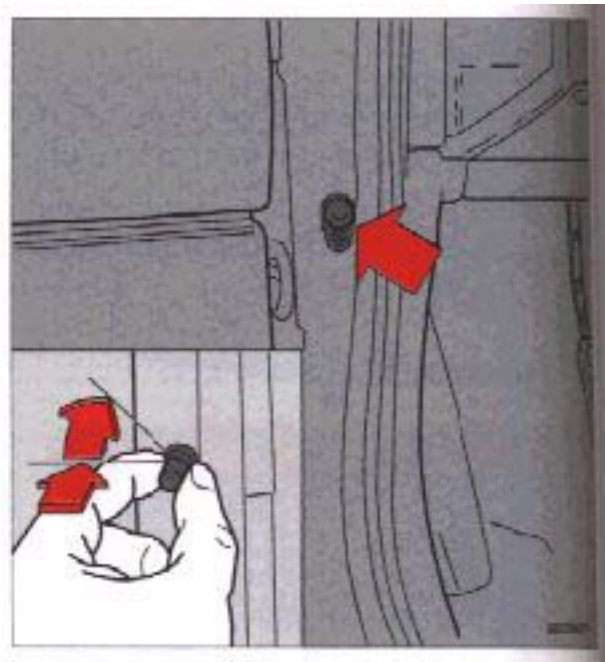
The vehicle is equipped with a central locking system. This means the lock on the driver's door controls the locks on the other doors (including the trunk or, on wagon models, the tailgate) automatically.

If the driver's door is locked or unlocked from the outside using the key, the other doors will be locked or unlocked automatically.

To lock/unlock the car by using the lock button on the inside of the driver's door, push/pull to lock/unlock all the doors. Check the action of the buttons on the other doors to verify their correct function (lock/unlock). The driver's door can be locked only by using the key when outside the vehicle.

WARNING!

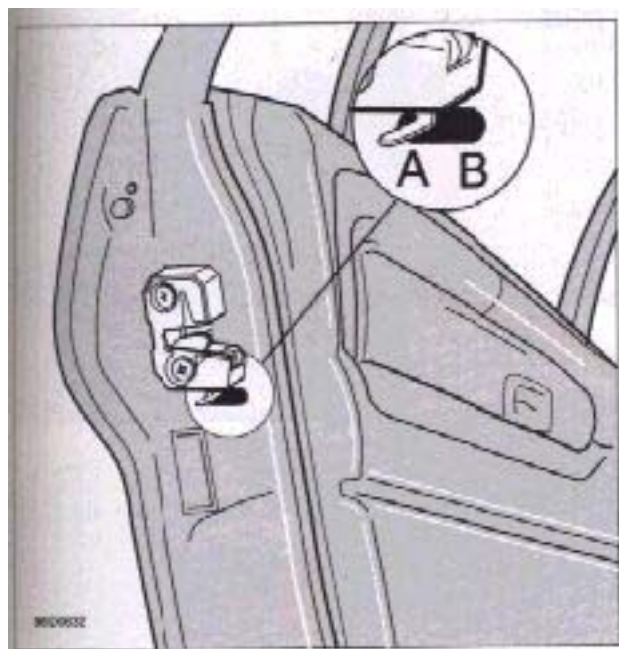
The lock buttons should not be in the down position during driving. In case of an accident, this may hinder rapid access to the occupants of the vehicle. (Also see information on "child safety locks" on next page).



To avoid battery drain

The interior light and the warning lights in the rear of the doors come on when a door is opened. To avoid battery drain when the doors are opened for prolonged periods, these lights can be switched off by pushing in and turning the door light switches slightly clockwise. When the door is closed the switch will return to its normal position.

pg. 37 Child safety locks, Trunk lid (sedan)



Child safety locks

The buttons are located on the rear door jambs.

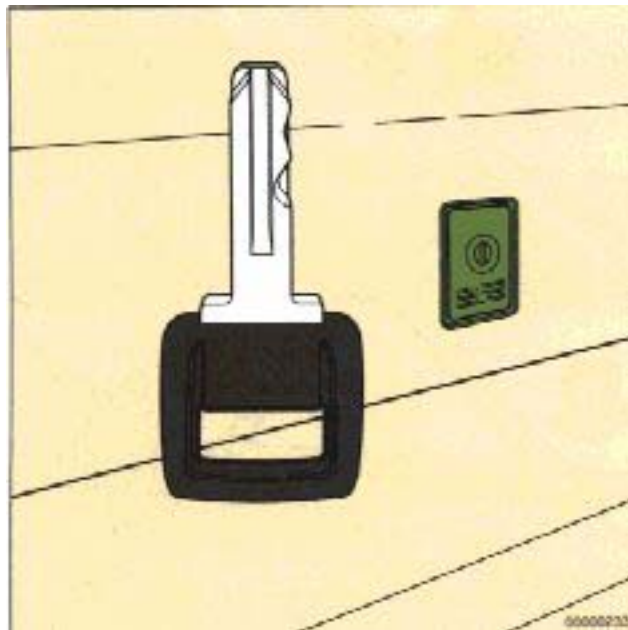
A The door lock functions normally.

B The door cannot be opened from the inside.

Normal operation from outside.

WARNING!

Remember, in the event of an accident, the rear seat passengers cannot open the doors from the inside with the buttons in position B .



Trunk lid

The trunk lock is incorporated in the central locking system. This means that you can either lock or unlock the trunk by means of driver's door lock.

You can also operate the trunk lock directly with the master key even if the vehicle is centrally locked.



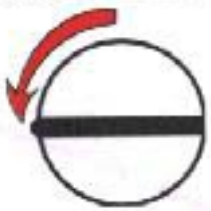
Unlocking



Locking

Withdraw key in vertical position.

The trunk lock can also be disconnected from the central locking system by turning the key counterclockwise as shown below:



Withdraw key in horizontal position.

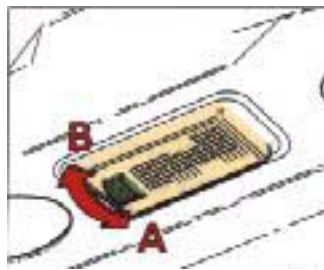
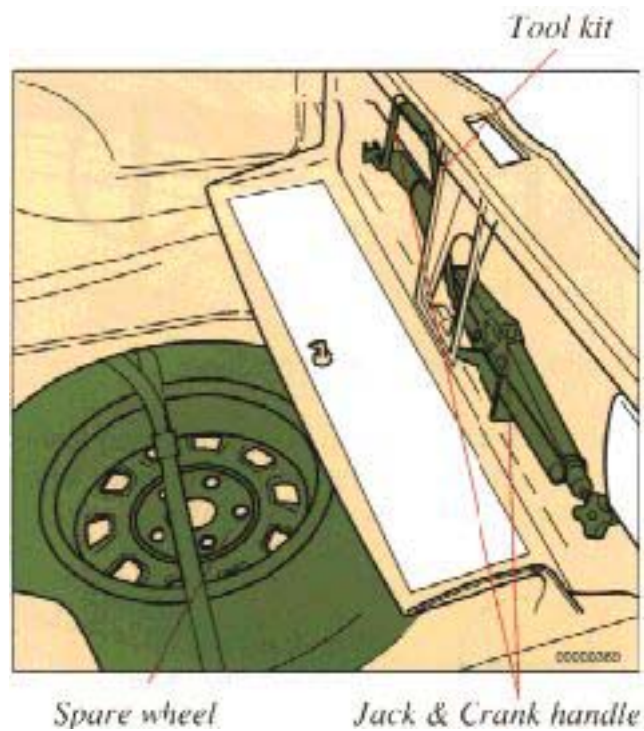
The trunk is now always locked.

This option can be used if for example, you lend your car to somebody. If you give only the service key to the driver it will not be possible to open the trunk.

To reconnect the lock to the central locking system:



Withdraw key in vertical position



Trunk light

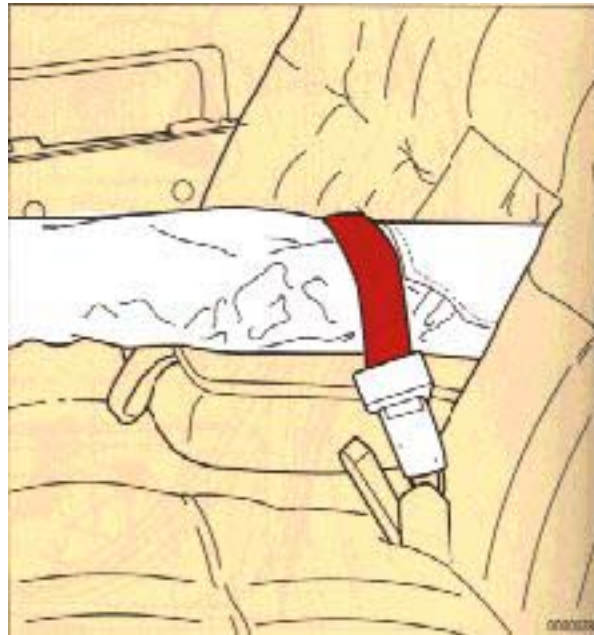
- A Light always off.
- B Light is on when trunk lid is opened.

Long load storage

In the panel behind the rear seat is a door which makes it possible to carry long loads such as skis, etc.

WARNING!

Cover sharp edges on load to help prevent injury to occupants. Secure load to help prevent shifting during sudden stops by wrapping seat belt around armrest as shown.

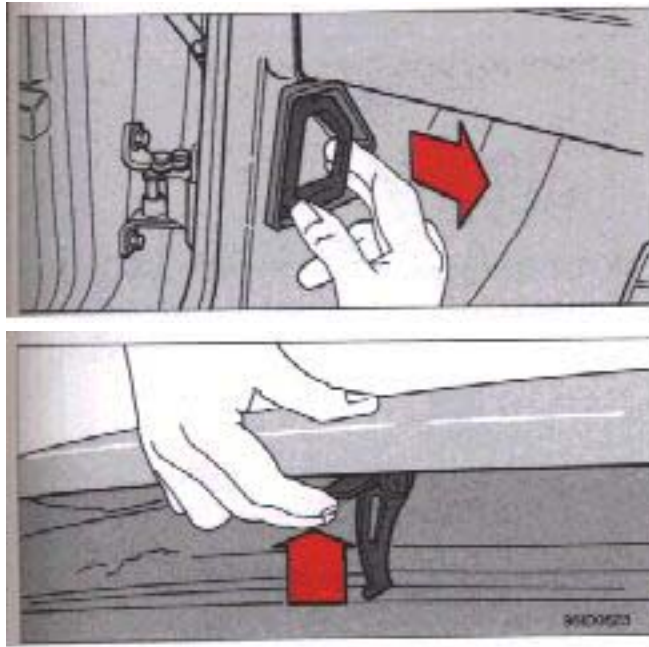


Protective covers (for skis) should also be used to avoid soiling or tearing the upholstery.
Please note that the flap in the rear seat is only intended for light loads such as skis, wood etc.
Max. length of load 6 1/2 ft = 2 m.
Max. weight of load 33 lbs = 15 kg.

WARNING!

Always turn engine off and apply parking brake when loading/unloading the vehicle. Place transmission selector in P (PARK) position to help prevent inadvertent movement of selector.

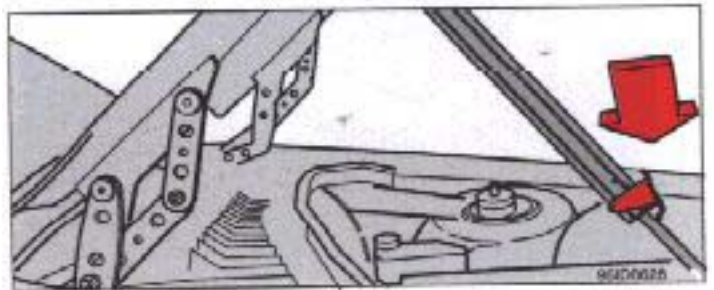
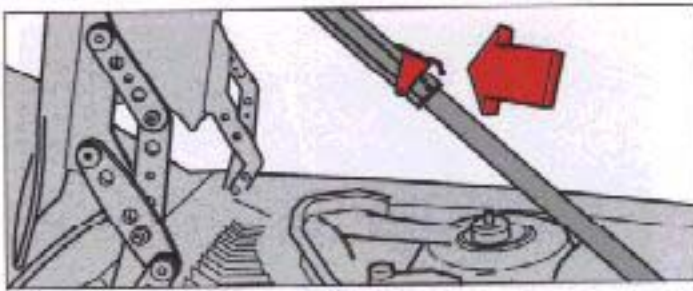
pg. 39 Hood, Engine compartment light



To open the hood

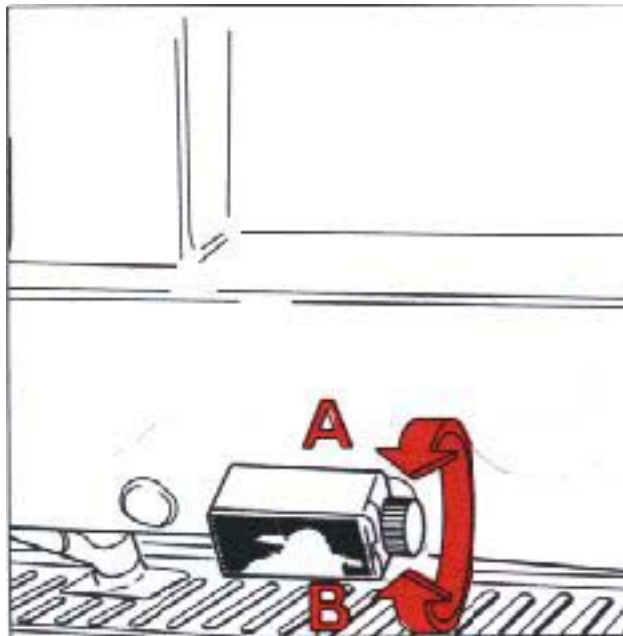
Pull the release handle (located under the left side of the dash).

Lift the hood slightly, insert a hand under the center line of the hood and depress the safety catch handle. Open the hood.
Check that the hood locks properly when closed.



The hood opens normally to an angle of approximately 55°. To open it to a completely vertical position, press both red catches upward as shown in the illustration. Make sure that catches return to their normal position.

When closing the hood, lift it slightly first and then press the catches downward. Use caution in garages with low roofs.



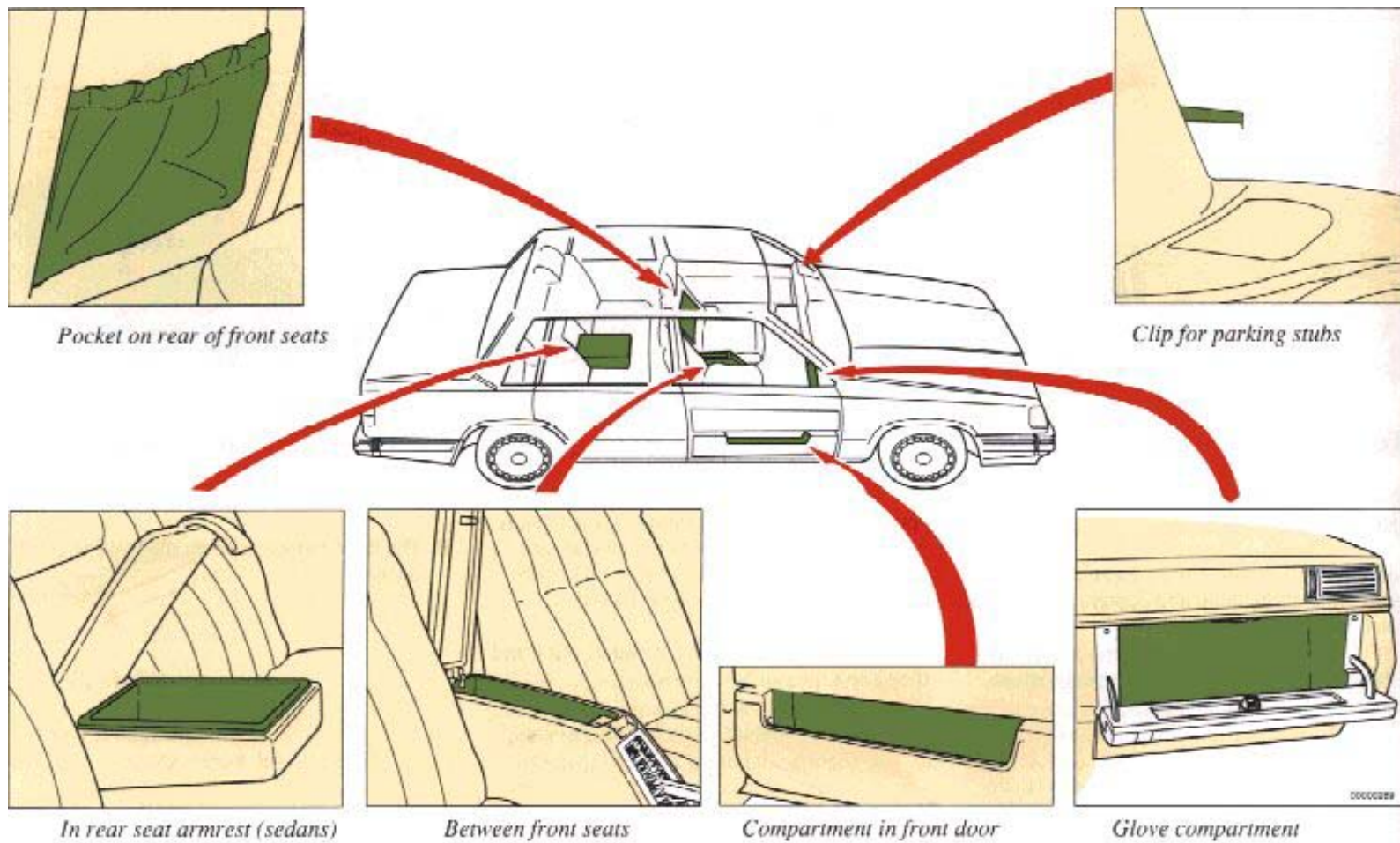
Engine compartment light

A the light is always off

B the light comes on when the hood is opened

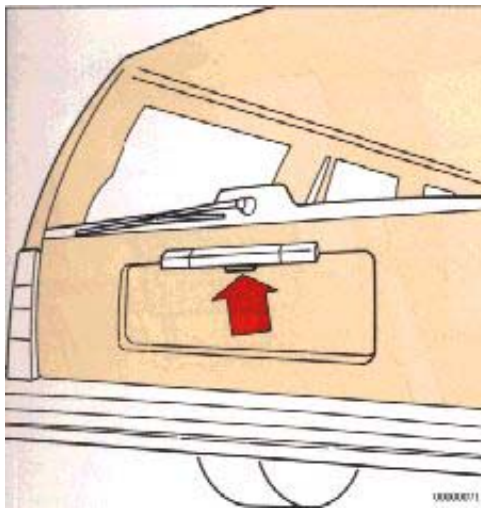


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WARNING!

Packages on the rear window shelf can obscure vision and may become dangerous projectiles in the event of a sudden stop or an accident.



Opening the tailgate

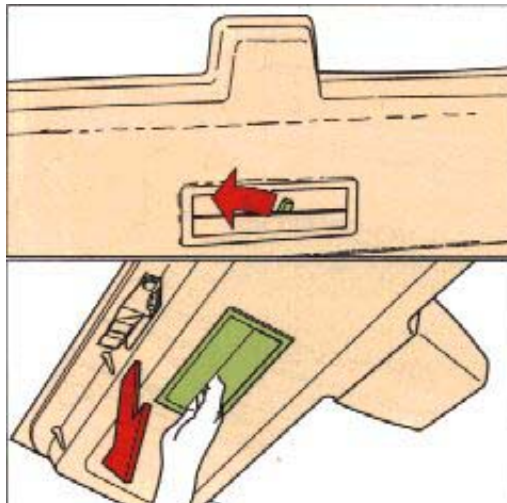
Tailgate

To unlock - turn the key clockwise and allow it to spring back.

To lock - turn the key counter-clockwise and allow it to spring back.

NOTE: If the vehicle has a central locking system the tailgate will be unlocked and locked at the same time as the driver's door.

The tailgate is opened by pressing up the catch on the handle.



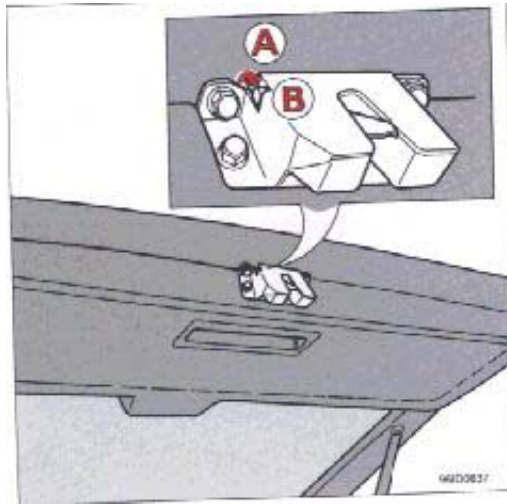
Opening from the inside

To open the tailgate from the inside of the vehicle move the lever to the left and push outwards. The handle can be used to close the tailgate from the inside (see illustration).

WARNING!

Do not drive with trunk lid or tailgate open!

Poisonous exhaust gases may enter via the open trunk lid or tailgate.



Location and setting of child safety lock

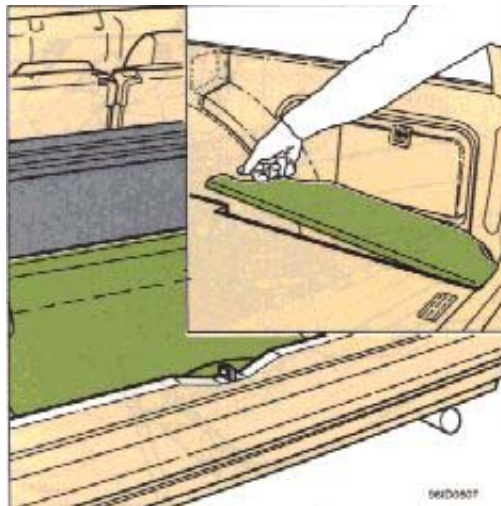
Child Safety lock

The tailgate incorporates a safety catch which is located to the side of the lock.

A the tailgate functions normally

B the tailgate cannot be opened from the inside.

pg. 42 Concealed storage bins, Tool box, Folding rear seat (wagon)



Opening the small storage bin

Concealed storage bins

There are 3 storage bins under the floor of the cargo space; the largest bin can be locked with a key.

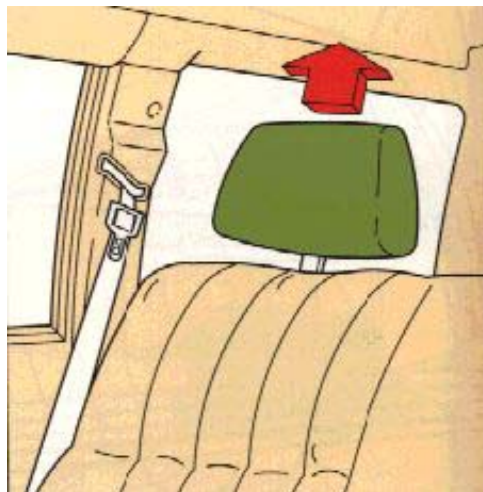
The lid of the largest storage bin is hinged in the middle.



Tool box

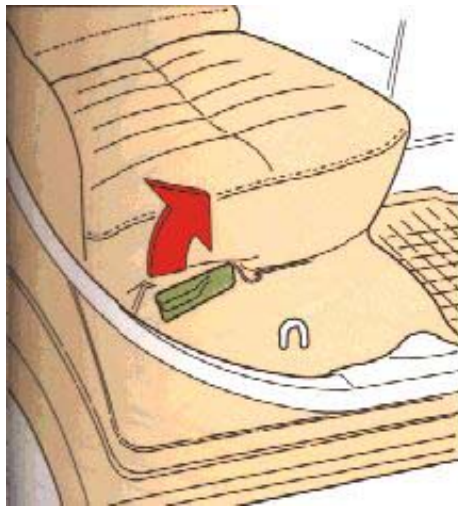
Tool box

The tool box can be released by turning the catch.



Folding rear seat; increasing the cargo space

The rear head restraints must be removed before the rear seat can be folded down. This is done by grasping the restraint and lifting straight up.



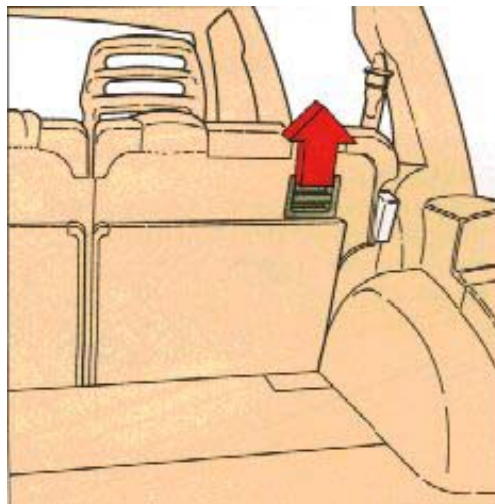
Seat cushion release lever

Folding rear seat; increasing the cargo space

The rear seat is split 60/40 so that each section can be folded independently.

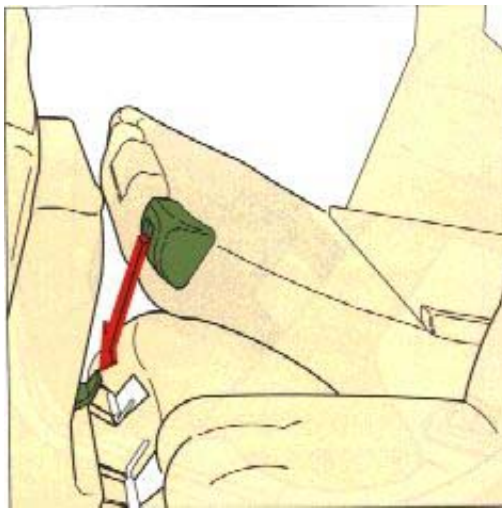
Straighten front backrests if they are tilted too far to the rear.

Place a hand on the rear of the seat cushion, lift the release lever on the seat cushion, and swing the cushion up and toward the back of the front seats.



Release lever - backrest

Remove head restraints from rear seat. This is done by grasping the restraint and lifting straight up. Move the backrest release lever upwards and fold the backrest forward.



Latches fit into holes

CAUTION : Check that latches under seat cushions engage holes at top edge of backrest.
Seat belts must be correctly positioned as seat is returned to normal position.

WARNING!

When the rear seat is folded down, do not place heavy objects against the backs of the front seat. This places a severe strain on the folded down backrest of the rear seat. Cargo must not be stacked higher than the top of seatbacks. This will reduce the possibility of luggage, etc. becoming projectiles during sudden maneuvers, rapid braking or an accident.

pg. 44 Removing seat cushions, Securing cargo (wagon)



Lift the seat cushion part way and remove the seat.

Removing seat cushions

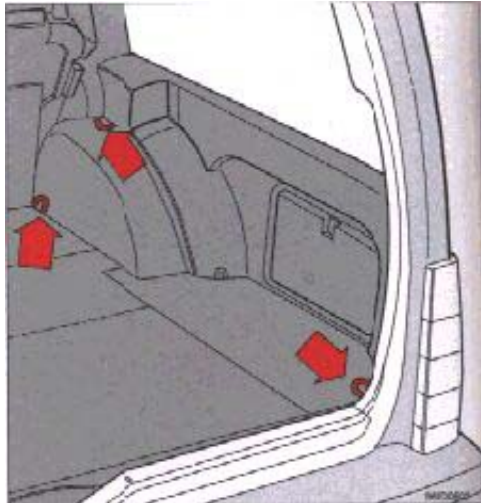
The seat cushion can be easily removed to provide a slightly larger cargo storage area. To remove: lift seat cushion out of the hinges.

WARNING!

Unless the station wagon is equipped with a cargo-compartment seat (Volvo accessory) passengers should not ride in this section of the car.

WARNING! Do not place extremely heavy articles the front seats, as the backrest which is folded down is then placed under severe strain.

Be sure to secure cargo. Hard and sharp articles could otherwise damage the frontseat backrest and/or cause injury to passengers in the event of rapid braking or a collision.



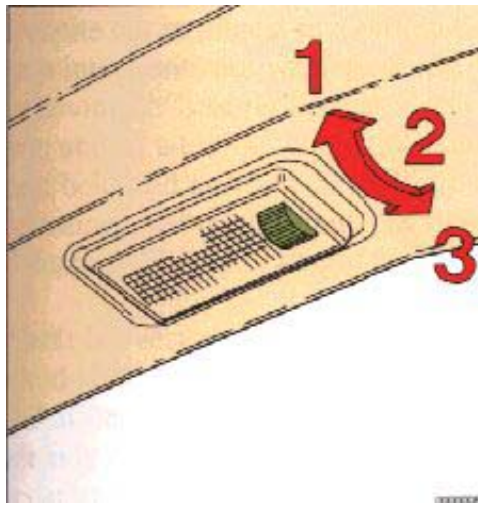
Always secure cargo

Securing cargo

As a safety precaution, the cargo space is equipped with six eyelets to which straps can be attached to secure luggage. Suitable straps or a cargo net can be purchased from your Volvo dealer.

WARNING! The eyelets are not to be used as passenger restraints.

pg. 45 Cargo space lighting, Spare tire and jack (wagon)

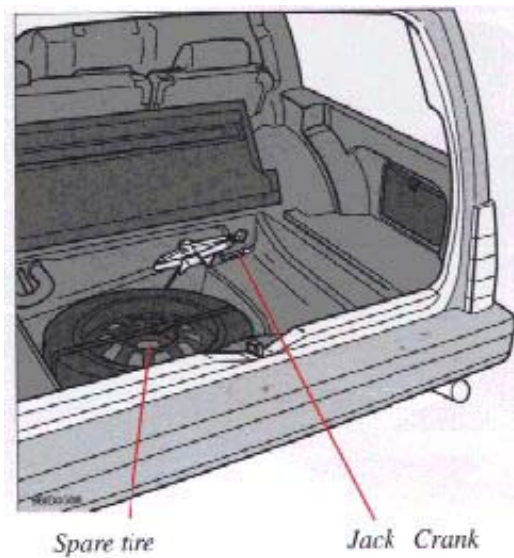


Switch positions

Cargo space lighting

There is an extra courtesy light at the rear of the cargo space.

- 1 Light comes on when the tailgate is opened
- 2 The light is always OFF
- 3 The light is always ON



Spare tire and jack

Spare tire
Jack
Crank

Spare tire and jack

The spare tire and the jack are located beneath the floor mat in the large storage bin.
Always secure the spare tire and the jack to prevent them from rattling.

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Starting and driving, Break-in period

pg. 47 Starting and driving

Starting and driving

This section on starting and driving contains items such as starting the engine, operating gear selector, towing, trailers.

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[pg. 49](#) Fuel requirements, Refueling

[pg. 50](#) Economical driving

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pg. 48 Break-in period, Fuel requirements

A new car should be broken-in!

Refrain from utilizing your car's full driving potential during the first 1,200 miles (2,000 km).

Automatic transmission

Do not use "kick-down" during the first 1,200 miles (2,000 km).

Breaking-in parking brake (hand brake)

To obtain best parking brake performance, the brake linings should be broken-in. Stop 5-7 times from 30 mph (50 km/h), transmission in neutral, applying the parking brake with the release button pressed in during the stop.

The force must not lock the rear wheels. If this happens, release the brake enough to let the wheels rotate. Drive a mile between each stop to cool the brakes. Check for proper parking brake operation.

Carbons deposit build-up

Your engine has been designed for peak performance and smooth operation. The fuel you plays a major role on how your engine will function. With the many variations of fuel available, it is important that detergent blend fuels be used to reduce the risk of intake valve carbon deposit build-up and clogged fuel injectors. Both of these conditions will rob your engine of the very thing it has been designed for, performance and smooth operation.

Note:
Volvo does not recommend the use of fuel additives as they can adversely affect engine performance.

WARNING!

The brake lights are illuminated when applying the parking brake. To warn traffic from behind it is therefore advisable to depress the brake pedal slightly to illuminate the brake lights.

pg. 49 Fuel requirements, Refueling

Unleaded Fuel

Each Volvo has a three-way catalytic converter and must use only unleaded gasoline. U.S. and Canadian regulations require that pumps delivering unleaded gasoline be labeled "UNLEADED". Only these pumps have nozzles which fit your car's filler inlet. It is unlawful to dispense leaded fuel into a vehicle labeled "unleaded gasoline only". Leaded gasoline damages the three-way catalytic converter and the heated oxygen sensor system. Repeated use of leaded gasoline will lessen the effectiveness of the emission control system and could result in loss of emission warranty coverage. State and local vehicle inspection programs will make detection of misfueling easier, possibly resulting in emission test failure for misfueled vehicles.

Octane Rating

Volvo recommends the use of unleaded gasoline with an (R+M)/2 octane rating (also called the Anti-Knock Index, or AKI) of 91 or higher. This is generally equivalent to a Research Octane Number (RON) of 95 or higher.

The minimum octane requirement is AKI 87 (RON 91).

Turbo models should be run on RON 95 fuel only.

Detergent Or Injector Cleaning Gasoline

The use of specially formulated gasoline which contains so called "detergent" or "injector cleaning" additives is allowed and recommended by Volvo. The use of these detergent effective in reducing the build up of certain injector deposits.

Gasoline Containing Alcohol

Some fuel suppliers sell gasoline containing alcohol without advertising the presence of alcohol. If you are not sure whether there is alcohol in the gasoline you buy, check with the service station operator. Blends of unleaded gasoline and ethanol (ethyl alcohol, grain alcohol), sometimes called "gasohol", are available in some areas. Gasohol, if used, must contain no more than 10 percent ethanol and must have an (R+M)/2 ratings of 87 or higher. If you experience problems with starting, driveability, or fuel economy with gasohol, you should discontinue its use.

CAUTION:

Take care not to spill gasoline during refueling. Gasolines containing alcohol can cause damage to painted surfaces, which may not be covered under the New Vehicle Limited Warranty.

Do not use gasolines containing methanol (methyl alcohol, wood alcohol). This practice can result in vehicle performance deterioration and can damage critical parts in the fuel system. Such damage may not be covered under the NEW VEHICLE LIMITED WARRANTY.

Refueling

The fuel tank filler cap is located behind the door on the left rear fender. Open cap slowly during hot weather conditions.

When filling, position the cap in the special bracket on the door.

After filling the tank, install the cap and turn until a "click" is heard.

The fuel tank is designed to hold approximately 21.1 US gal (80 liters), with sufficient volume left over to accommodate possible expansion of the fuel in hot weather. Be aware that the "usable" tank capacity will be somewhat less than the specified maximum. When the fuel level is low, such factors as ambient temperature, the fuel's "vapor pressure" characteristics, and terrain can affect the fuel pumps' ability to supply the engine with an adequate supply of fuel. Therefore, it is advisable to refuel as soon as possible when the needle nears the red zone, or when the fuel warning light comes on.

pg. 50 Driving economy

Economical driving does not necessarily mean driving slowly

Better driving economy may be obtained by thinking ahead, avoiding rapid starts and stops and adjusting the speed of your vehicle to immediate traffic conditions. Observe the following rules:

- Bring the engine to normal operating temperature as soon as possible by driving with a light foot on the accelerator pedal for the first minutes of operation. A cold engine uses more fuel and is subject to increased wear.
- Whenever possible, avoid using the car for driving short distances. This does not allow the engine to reach normal operating temperature.
- Drive carefully and avoid rapid acceleration and hard braking.
- Do not exceed speed limit.
- Avoid carrying unnecessary items (extra load) in the car.
- Check tire pressure regularly (check when tires are cold).
- Remove snow tires when threat of snow or ice has ended.

- Note that roof racks, ski racks, etc., increase air resistance and thereby fuel consumption.
- Turbo: try to keep the boost pressure gauge in the black range.
- Utilize overdrive at speeds above approx. 45 mph (70 km/h)
- Avoid using automatic transmission kick-down feature unless necessary.
- Avoid using the air conditioning when it is not required. When engaged, the air conditioner's compressor places an additional load on the engine.

Other factors which decrease gas mileage are:

- Worn or dirty spark plugs
- Incorrect spark plug gap
- Dirty air filter
- Incorrect valve clearance
- Dirty engine oil and clogged oil filter
- Dragging brakes
- Incorrect front end alignment
- Low tire pressure

Some of the above mentioned items and others are checked at the standard Maintenance Service intervals.

pg. 51 Starting the engine, Turbo caution

Starting and stopping a car equipped with automatic transmission.

1 Fasten the seat belt.

WARNING! Before starting, check that the seat is adjusted properly. Make sure the brake pedal can be depressed completely. Move the seat closer if necessary. Refer to section "Front seats".

2 Apply the parking brake, if not already set. Depress the brake pedal firmly.

3 Place the gear selector lever in Park (or Neutral).

4 Without touching the accelerator pedal, turn the ignition key to the starting position. Release the key as soon as the engine starts.

Avoid repeated short attempts to start (fuel is injected every time the starter is engaged when engine is cold). Allow the starter to operate for a longer time (but no more than 15-20 seconds). Do not race a cold engine immediately after starting. Oil flow may not reach some lubricating points fast enough to prevent engine damage.

5 Select desired gear. The gear engages after a slight delay, especially noticeable when selecting R.

CAUTION:

Engine should be idling; never accelerate until after you feel the gear engage! Too-rapid acceleration immediately after selecting a gear will cause harsh engagement and premature transmission wear.

NOTE: Selecting position P or N when idling at a standstill for prolonged periods of time will help prevent overheating of transmission oil.

6 Release the brakes and accelerate.

To stop the car, release the accelerator pedal and apply the brakes.

WARNING!

Always place gear selector securely in Park and apply parking brake before leaving vehicle. Never leave car unattended with engine running.

Always open the garage doors fully before starting the engine inside a garage to ensure adequate ventilation. The exhaust gases contain carbon monoxide, which is invisible and odorless but very poisonous.

Engine warm-up - initial driving procedure

Experience shows that engines in vehicles driven short distances are subject to abnormally-rapid wear because the engine never reaches normal operating temperature. It is therefore beneficial to reach normal operating temperature as soon as possible. This is best achieved by driving with a light foot on the accelerator pedal for a few minutes after starting, rather than prolonged idling.

Turbo caution

Never race the engine immediately after starting . Oil flow may not reach some lubricating points fast enough to prevent engine damage.

Before switching off the engine, let it operate at idle for a short time to allow the spinning of the turbo-compressor's turbine vanes to slow. After hard driving, this idle time should last a couple of minutes, during which the vanes will slow and the compressor will cool down while still receiving lubrication.

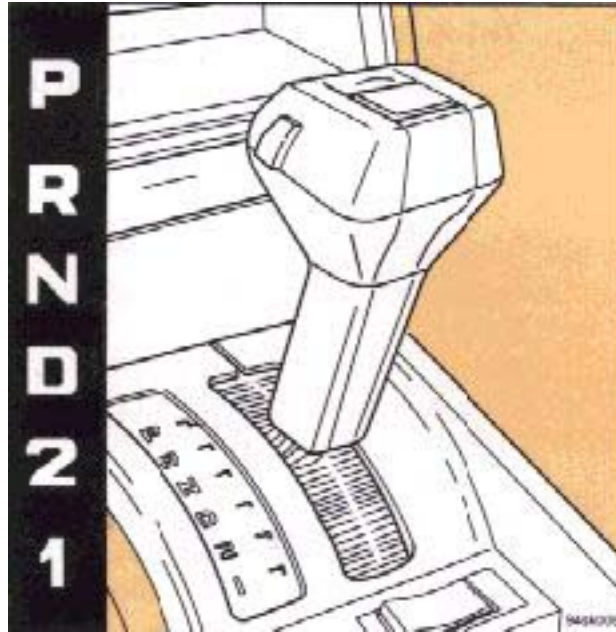
If the turbine vanes are spinning at high speeds when the engine is switched off, there is a great risk of heat damage and/or turbine seizure due to lack of lubrication.

Do not race the engine just prior to switching off!



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pg. 52 Automatic transmission



Gear selector positions

P park
R reverse
N neutral
D drive
2 intermediate
1 low

P (Park)

Use this position when parked with the engine running or stopped.

WARNING!

Never leave the car when the engine is running. If, by mistake, the gear selector is moved from P the car may start moving.

Never use P while car is in motion.

The transmission is mechanically locked when in position P. Also, apply the parking brake when parking on grades.

R (Reverse)

Never engage R while is moving forward.

N (Neutral)

Neutral position = no gear is engaged. Use parking brake.

Driving gears

D (Drive)

D is the normal driving position. Upshifts and downshifts of the forward gears occur automatically and are governed by accelerator pedal position and vehicle speed.

2 (intermediate position)

Upshifts and downshifts of first two gears (low and intermediate) occur automatically. No upshift to 3rd or 4th gear occurs. Position 2 may be used to obtain forced downshift to 2nd gear for increased engine braking effect.

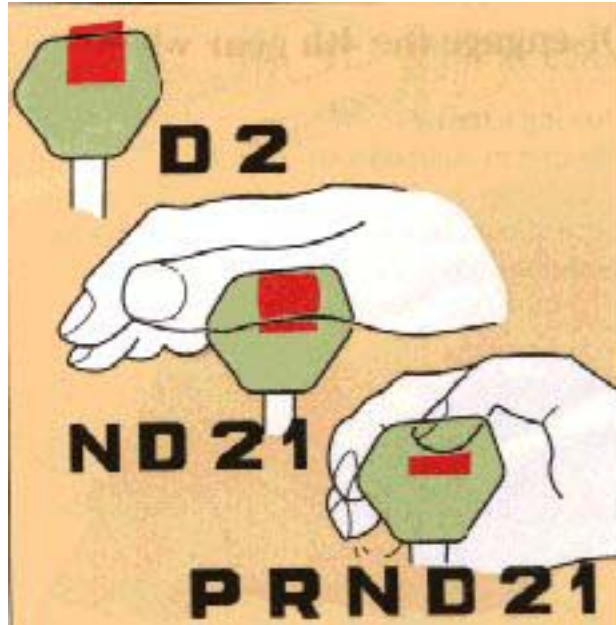
1 (low position)

If position 1 is selected when driving at high speeds, 2 is engaged first and 1 when the speed has dropped to approx. 10 mph (50 km/h).

NOTE: No upshift can occur once 1 is engaged.

Use position 1 to select low gear when no upshift is desired, for instance, when entering and descending steep grades.

pg. 53 Automatic transmission (cont.)



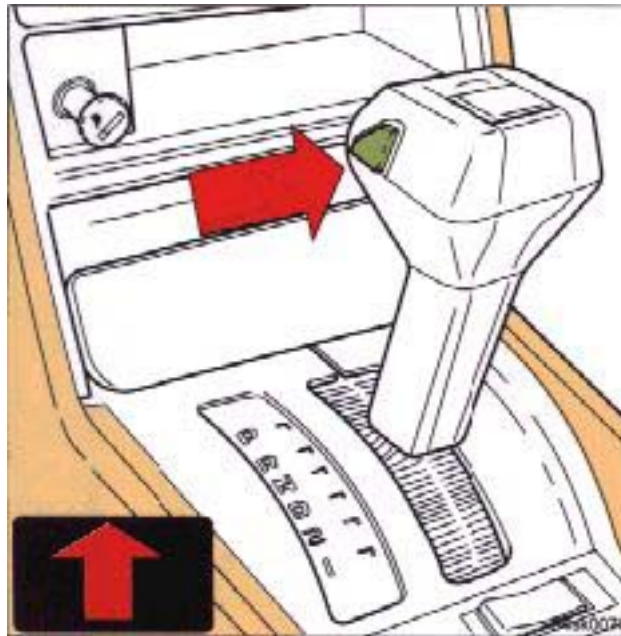
Shift gate

The gear selector can be moved freely between D and 2. Selections of other positions are obtained by depressing the selector knob prior to moving the selector.

Slightly depressing the selector knob allows selection of positions N, D, 2 and 1.

Fully depressing the selector knob allows selection of positions R and P. This is also necessary when initially bringing the selector out of position P.

Fully depressing the selector knob thus permits shifting freely between all positions.



4th gear disengagement:

The 4th gear is engaged automatically after the transmission has shifted through 1st, 2nd and 3rd gears at certain speeds and loads. By pressing in the button at the rear of the selector level, the 4th gear can be disengaged, thus providing a three-speed transmission. As a reminder the 4th light on the dashboard glows. By pressing in the button again, the transmission reverts to four-speed operation and the 4th light shuts off.

Disengage the 4th gear when:

- towing a trailer
- driving in mountainous regions.

NOTE: Since using the 4th gear improves fuel economy, it should be used as often as possible in conditions other than those stated above.

Kick-down

Automatic shift to a lower gear (kick-down) is achieved by depressing the accelerator pedal fully and briskly.

An up-shift will be achieved when approaching the top speed for a particular gear or by releasing the

accelerator pedal slightly.

Kick-down can be used for maximum acceleration or when passing at highway speeds.

pg. 54

"Special tips"

- For steep hills and when driving for prolonged periods at low speeds, position 1 should be selected. Avoid, however, repeated changes since this can cause overheating of the transmission oil. For driving on long continuous uphill gradients, select position 2.
- Select position 1 when descending long, steep downgrades, in order to obtain the best possible engine braking effect.
- Do not hold the car stationary on an incline by using the accelerator pedal. Instead, apply the hand brake (parking brake). This prevents the transmission oil from becoming overheated.
- When towing a trailer, disengage 4th gear (the indicator light on the instrument panel illuminates).

Cooling system

The risk for overheating is greatest, especially in hot weather, when:

- towing a trailer up steep inclines for prolonged periods at wide open throttle and low engine rpm.
- idling for prolonged periods while the air conditioning is in operation.
- stopping the engine suddenly after high speed driving (so-called "after-boiling" can occur).

To avoid overheating, the following rules should be followed:

- Reduce speed and downshift when towing a trailer up long, steep inclines. The risk of overheating can be reduced by switching off the air conditioning system for a short time.
- Do not let the engine idle unnecessarily for prolonged periods.
- Do not stop the engine immediately after high-speed driving, but instead, allow the engine to idle for 1/2-1 minute before switching off.

When the risk of overheating is imminent, or in the event of overheating, (the temperature gauge goes repeatedly into, or stays continually in, the red section) the following precautions should be taken:

- Switch off the air conditioning system.
- Stop the car and put the gear lever into neutral (position N). Do not stop the engine!
- If the vehicle is overheating, switch the heater to full (maximum) position.
- Increase the engine speed to approx. 2000 rpm (twice idling speed).
- Check the level of coolant in the expansion tank. Top-up, if necessary. See "Cooling System".

WARNING! Do not drive with trunk lid or tailgate open!
Poisonous exhaust gases may enter via the open trunk lid or tailgate.
If the trunk lid/tailgate must be kept open for any reason, proceed as follows:

- Close the windows
- Set the ventilation system control to  and fan control to its highest setting.

Driving through standing water

CAUTION: Drive slowly and carefully if going through standing water (i.e. flooded roadways, etc.). Damage to engine could result if excess water is ingested through the air intake system. Never drive the vehicle in water deeper than 1 foot (300 mm).

pg. 55 Points to remember (cont.)

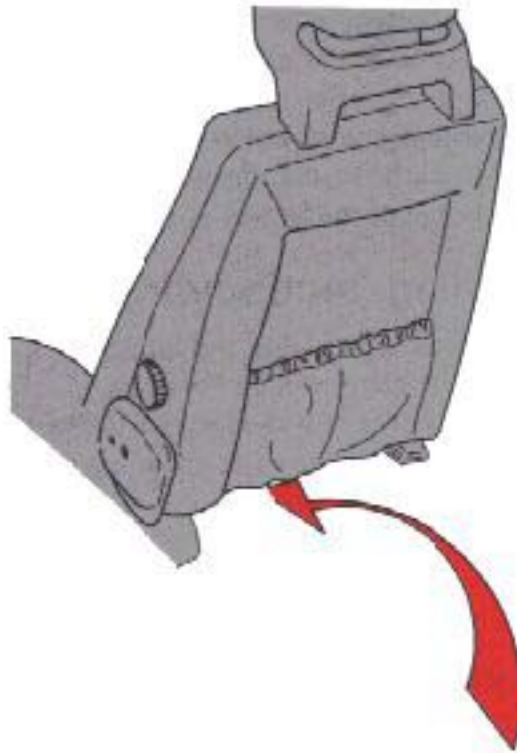
Electrical system

When replacing the battery or when carrying out work involving the electrical system, the following should be observed:

- A battery connection to the wrong terminal will damage the diodes. Before connections are made, check the polarity of the battery with a voltmeter.
- If booster batteries are used for starting, they must be properly connected to minimize the risk of the diode being damaged.

For correct connection, see "Jump starting" section.

- Never disconnect the battery circuit (for example, to replace the battery) while the engine is running, as this will immediately ruin the generator. Always make sure that all the battery connections are properly tightened.
- If any electrical/welding work is performed on the vehicle, the battery's ground lead (negative cable) and all the connecting cables of the generator must be disconnected and the welder cables placed as near the welding point as possible.



WARNING!

The Supplemental Restraint System is grounded under the driver's seat. Do not loosen the two screws grounding the unit. Do not ground other electrical components using these screws or any other points near them. Faults in the system could occur if it is improperly grounded.

pg. 56 Points to remember

Weight distribution affects handling

At the specified curb weight your car has a tendency to understeer, which means that the steering wheel has to be turned more than might seem appropriate for the curvature of a bend. This ensures good stability and reduces the risk of rear wheel skid. Remember that these properties can alter with the vehicle load. The heavier the load in the trunk, the less the tendency to understeer.

Handling, roadholding

Vehicle load, tire design, and inflation pressure, all affect vehicle handling. Therefore, check that the tires are inflated to the recommended pressure according to the vehicle load. See "Tire pressure" section. Loads should be distributed so that capacity weight or maximum permissible axle loads are not exceeded.

WARNING! It is recommended that tire of the same make and dimensions be used on all four wheels. Do not use bias ply tires as this will adversely alter vehicle handling characteristics.

WARNING!

An extra non-Volvo mat on the driver's floor can cause the accelerator pedal to catch. Check that the movement of the accelerator pedal is not impeded.

Roof racks (removable and permanent)

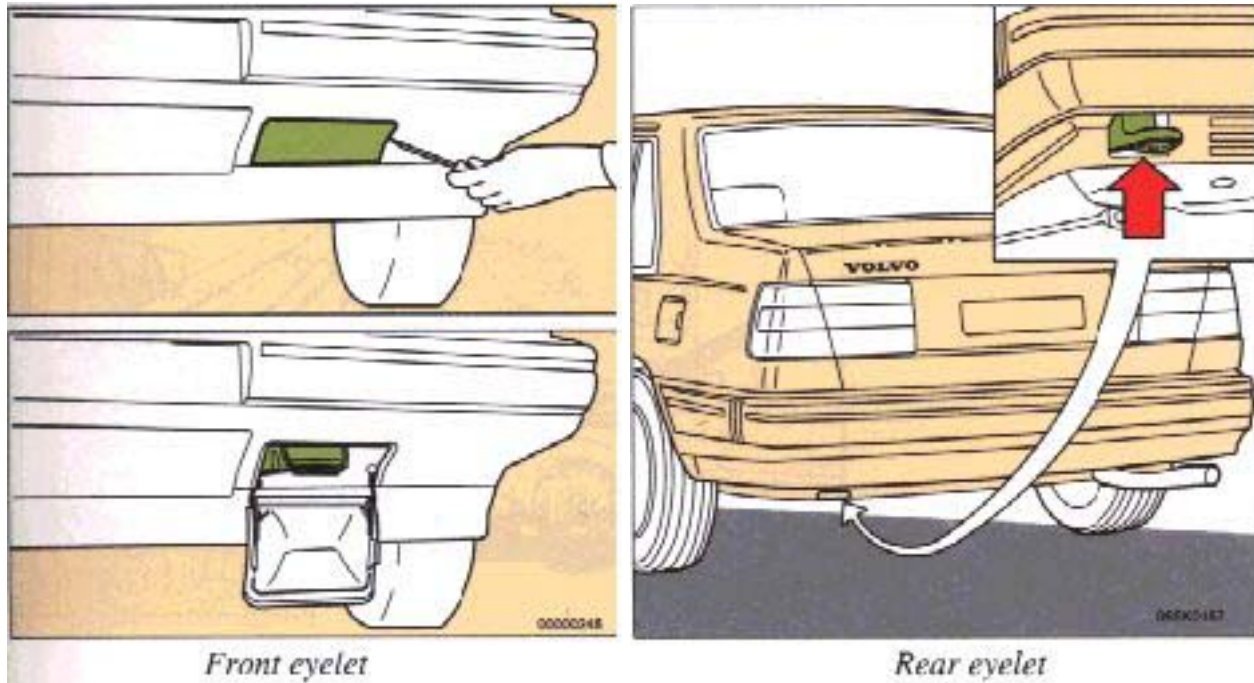
Roof rails are available as Volvo accessories. Observe the following points when is use:

- Avoid single-point loads. Distribute the load evenly.
- Place heavier cargo at bottom of load.
- Observe that center of gravity and handling are influenced by load weight.
- Increasing load size increases wind resistance and, thus, adversely affects fuel economy.
- Anchor the cargo correctly with a cord.
- Drive carefully. Avoid rapid starts, fast cornering and hard braking.
- Max. roof load is 220 lbs. (100 kg) for removable racks mounted on drip rails.
- Max. roof load is 70 lbs (30 kg) for permanent rack mounted directly on roof.



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pg. 57 Emergency towing (pulling of vehicle)



Precautionary steps to observe when car is in tow

- Steering must be unlocked.
- Please check with state and local authorities before attempting this type of towing, as vehicles being towed are subject to regulations regarding maximum towing speed, length and type of towing device, lighting, etc.
- Remember that power brake and power steering assists will not be available when engine is inoperative. Brake pedal pressure required is 3 - 4 times above normal and greater steering effort must be exerted.
- Gear selector in position N. Check transmission oil level (see section titled "Transmission oil").
- Maximum speed: 20 mph (30 km/h).
- Maximum distance with rear wheels on ground: 20 miles (30 km).

DON NOT ATTEMPT TO START CAR BY PUSHING OR PULLING THE CAR AS DAMAGE TO CATALYTIC CONVERTER CAN RESULT.

CAUTION: The towing eyelets must not be used for pulling another vehicle out of a ditch or any similar purpose involving severe strain.

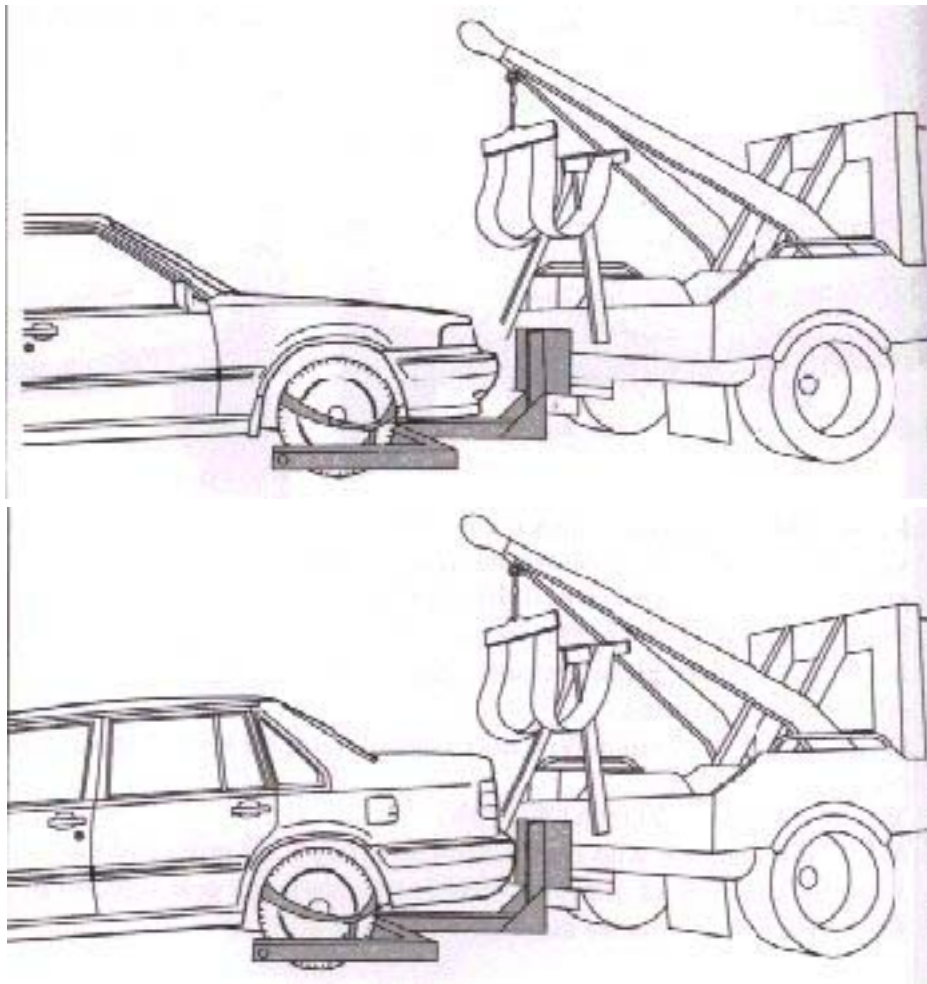
pg. 58 Vehicle towing information

Only use wheel lift or flat bed equipment.

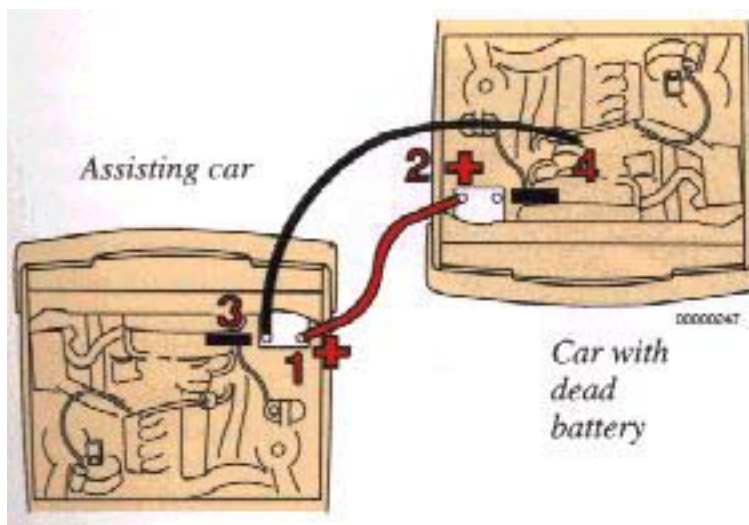
CAUTION:

Sling-type equipment applied at the front will damage radiator and air conditioning lines.

It is equally important not to use slingtype equipment at the rear or apply lifting equipment inside the rear wheels: serious damage to the rear axle may result.



pg. 59 Jump starting



CAUTION:

Improper hook-up of jumper cables or use of other than 12-volt batteries could result in damage to equipment and/or battery.

Check that cars are not touching to prevent premature completion of negative circuit. Note the position of the battery terminals and using jumper cables, first connect booster battery positive (+) terminal (1) to car battery positive (+) terminal (2). Then connect booster battery negative (-) terminal (3) to a stationary solid metal part on the engine at a point away from the battery (4).

Do not connect booster cable to any part of fuel system or any moving parts. Avoid touching hot manifolds.

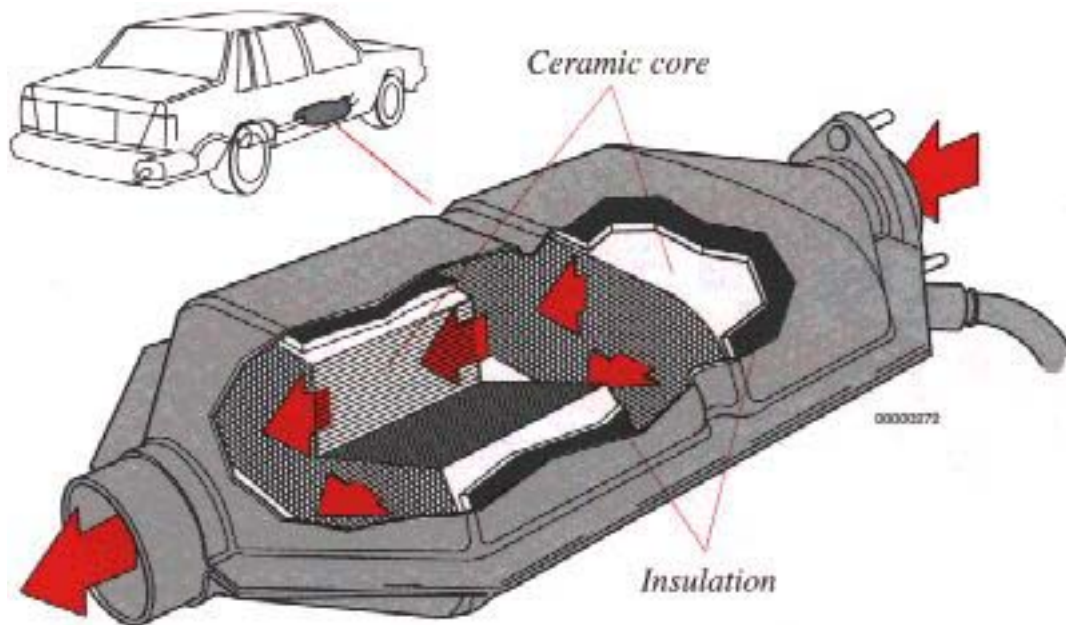
After engine has started, remove first the negative (-) terminal jumper cable. Then remove the positive (+) terminal jumper cable.

WARNING!

To reduce the possibility of explosion, never expose battery to open flame or electric spark. Do not smoke near battery. Batteries generate hydrogen gas which is flammable and explosive. Battery fluid contains sulfuric acid. Do not allow battery fluid to contact eyes, skin, fabrics or painted surfaces. If contact occurs, flush affected area immediately with water. Obtain medical attention immediately if eyes are affected.

Catalytic converter cautions

- Keep your engine properly tuned. Certain engine malfunctions, particularly involving the electrical, fuel or distributor ignition systems, may cause unusually high three-way catalytic converter temperatures. Do not continue to operate your vehicle if you detect engine misfire, noticeable loss of power or other unusual operating conditions, such as engine overheating or backfiring. A properly tuned engine will help avoid malfunction that could damage the catalytic converter.
- Remember that tampering or unauthorized modification to the engine or the vehicle may be illegal and can cause three-way catalytic converter or exhaust system overheating. This includes:
 - Altering fuel injection settings or components. Adjusting distributor ignition timing beyond specified limits.
 - Altering emission system components or location or removing components
 - Repeated use of leaded fuel.



- Do not park your car over combustible materials, such as grass or leaves, which can come into contact with the hot exhaust system and cause such materials to ignite under certain wind and weather conditions.
- Excessive starter cranking (in excess of one minute), with an intermittently firing or flooded engine, can cause catalytic or exhaust system overheating.

NOTE: Unleaded fuel is required for cars with three-way catalytic converters. A label on the instrument panel and inside fuel tank filler door will remind owners and filling station attendants of this requirement.

Important! It is unlawful to dispense leaded fuel into any vehicle labeled "unleaded gasoline only".

pg. 61 Brake system



If one of the brake circuits should malfunction, the red warning light will come on.

The pedal stroke increases slightly, the pedal feels softer and on cars equipped with ABS, extra pressure is required for normal braking.

If the light comes on while driving or braking: stop immediately and check the brake fluid level in the reservoir.

WARNING!

If the fluid level is below the MIN mark in either section of the reservoir: Do Not Drive. Tow the car to a garage, have the brake system checked and any leakage repaired.

If the fluid level is below the MIN mark in half of the reservoir: Drive carefully to a garage and have the brake system inspected.



Anti-lock Brake System ABS

If the warning lamp lights up there is a malfunction of the ABS system (the standard braking system will however function) and the vehicle should be driven to a Volvo dealer for inspection.

The Anti-lock Braking System (ABS) is designed to improve vehicle control (i.e. stopping and steering) during severe braking conditions by limiting wheel lock-up. When the system "senses" impending wheel lock-up, braking pressure is automatically modulated in order to help prevent lock-up, which could lead to a skid.

While the system is modulating braking pressure, the driver may detect a pulsation of the brake pedal. The on/off switching of the ABS modulation may also be audible. This is normal.

Please be aware that ABS does not increase the absolute braking potential of the vehicle. Thus, while

control will be enhanced, ABS will not shorten stopping distances on slippery surfaces.

If the brake power-assist does not function

The power assist to the brakes functions only when the engine is running. When the car is moving without the engine running the brake pedal pressure required to stop the car is increased by 3-4 times. The brake pedal feels stiff and hard.

Moisture on brake discs and brake pads affects braking.

Driving in rain and slush or passing through an automatic car wash can cause water to collect on the brake discs and pads. This will cause a delay in braking effect when the pedal is depressed. To avoid such a delay when the brakes are needed, depress the pedal occasionally when driving through rain, slush etc. This will remove the water from the brakes. Check that brake application feels normal. This should also be done after washing or starting in very damp weather.

Severe strain on the brake system

The brakes will be subject to severe strain when driving in mountains or hilly areas. The speed is usually low which means that the cooling of the brakes is less efficient than when driving on level roads. To reduce the strain on the brakes it is advisable not to use the brakes excessively. Instead, shift into a lower gear and let the engine help with the braking. A good rule is to use the same gear downhill as would be used ascending the same grade. For vehicles with automatic transmission use position 2 or, in some cases, 1. Do not forget that, if you are towing a trailer, the brakes will be subjected to greater load than is normal.

pg. 62 Trailer towing

When preparing for trailer hauling, observe the following:

- Use a trailer hitch which meets Federal Safety Standards for rear end collisions (FMVSS 301-75) For trailer weights exceeding 2000 lbs. (908 kg), use only a trailer hitch offered as a Genuine Volvo Accessory.

NOTE: Models with automatic transmission are equipped with a transmission oil cooler as standard equipment. This cooler helps prevent overheating of the transmission during times of increased load, as when towing a trailer.

- Maximum trailer weight recommended by Volvo is 3300 lbs (1500 kg). Observe legal requirements of the state in which the vehicles are registered.

All Volvo models are equipped with energy-absorbing shock-mounted bumpers. Trailer hitch installation should not interfere with the proper operation of this bumper system.

WARNING! Bumper-attached trailer hitches must not be used on Volvos, nor should safety chains be attached to the bumper. Trailer hitches attaching to the vehicle rear axle must also not be used.

WARNING! Never connect a trailer's hydraulic brake system directly to the vehicle brake system, nor a trailer's lighting system directly to the vehicle lighting system. Consult your nearest authorized Volvo dealer for correct installation.

Trailer towing does not normally present any particular problems, but take into consideration: The rear suspension incorporates "Nivomat", an automatic level regulating system to compensate for load variations. The system operates when the vehicle is in motion. The rear of the vehicle will however droop if for instance you are carrying a lot of luggage in the trunk or if the vehicle is hitched to a trailer; but as soon as you start driving, the "Nivomat" system will raise the rear of the vehicle to the most suitable level.

- Recommended hitch tongue load is 165 (75 kgs) for trailer weights above 2,650 lbs (1,200 kgs) and 143-154 lbs (65-70 kgs) for trailer weights below 2,650 lbs (1,200 kgs). However, the hitch tongue load should not exceed 200 lbs (90 kgs).
- For trailer weights between 2,650-3,300 lbs (1,200-1,500 kgs) a top speed of 50 mph (80 km/h) should never be exceeded.
- Increase tire pressure to recommended full-load pressure. See section "Wheels and tires".
- Engine and transmission are subject to increased loads. Therefore, engine coolant temperature should be closely watched when driving in hot climates or hilly terrain. Use lower gear and turn off air conditioner if temperature gauge pointer enters the red range.
- Disengage the overdrive ( light goes on).
- Avoid overload and other abusive operation.
- Hauling a trailer affects handling, durability, and economy.
- It is necessary to balance trailer brakes with the towing vehicle brakes to provide a safe stop. Check and observe State/Local regulations.

- More frequent vehicle maintenance is required.
- Remove the ball and drawbar assembly when the hitch is not being used.

NOTE: Refer to section "Automatic transmission" for additional trailer hauling tips.

pg. 63 Winter driving

Cold weather precautions

If you wish to check your car before the approach of cold weather, the following advice is worth noting:

- Make sure that the engine coolant contains at least 50 percent antifreeze: that is, 5.0 qts. (4.25 liters) Volvo original coolant/antifreeze. This gives protection against freezing down to -31°F (-35°C). See section "Coolant".
- Try to keep the fuel tank well filled - this prevents the formation of condensation in the tank. In addition in extremely cold weather conditions it is worthwhile to add fuel line de-icer before refueling.
- The viscosity of the engine oil is important. Oil with low viscosity (thinner oil) improves cold-weather starting as well as decreasing fuel consumption while the engine is warming up. For winter use, 5W-30 oil, particularly the synthetic type, is recommended. Be sure to use good quality oil but do not use this cold-weather oil for hard driving or in warm weather. See section "Engine oil" for more information.
- The load placed on the battery is greater during the winter since the heater, windshield wipers, lighting etc. are used more often. Moreover, the capacity of the battery decreases as the temperature drops. In very cold weather, a poorly charged battery can freeze and be damaged. It is therefore advisable to check the state of charge more frequently and spray an anti-rust oil on the battery posts.
- To prevent the washer reservoir from freezing, add washer solvents containing antifreeze. This is important since the dirt is often splashed on the windshield during winter driving, thus requiring frequent use of the washers and wipers. The Volvo Washer Solvent should be diluted as follows:
Down to 14°F (-10°C): 1 part anti-freeze and 4 parts water
Down to 5°F (-15°C): 1 part anti-freeze and 3 parts water
Down to 0°F (-18°C): 1 part anti-freeze and 2 parts water
Down to -18°F (-28°): 1 part anti-freeze and 1 part water
- Use Volvo Teflon lock spray or grease in the locks. They can be purchased from your Volvo dealer.

NOTE: Avoid the use of de-icing sprays as they can cause damage to the locks.

pg. 64 Long distance trip

Before a long distance trip

It is always worthwhile to have your car checked at a Volvo dealer before driving long distances. Your dealer will also be able to supply you with bulbs, fuses, spark plugs and wiper blades for your use in the event that problems occur.

If you prefer to check the car yourself, please note the following:

Check that the engine runs smoothly and that fuel consumption is normal.

- Check engine oil, coolant levels, and for possible fuel leakage.
- Check transmission oil level and rear axle for leakage.
- Check condition of drive belts.
- Check state of charge of battery.
- Examine tires carefully (the spare tire as well), and replace those that are worn. Check tire pressures.
- The brakes, front wheel alignment, and steering gear should be checked by your Volvo dealer only.
- Check all lights, including high beams.
- Reflective warning triangles are legal requirement in some countries.
- Have a word with your Volvo dealer concerning engine adjustments if you intend to drive in countries where it may be difficult to obtain correct fuel.

City driving

City driving can be a severe driving condition. Low operating speeds, long periods of idling combined with high operating temperatures, air conditioning usage etc. will make necessary more frequent servicing (at least every third month).

pg. 65 Vehicle storage

If you do not intend to use your car for a long time

The following points may be of use if you do not intend to use your car for a long time (e.g. because of a long holiday, winter, etc.)

- Fill fuel tank to prevent water from condensing inside the tank.
- Wash the car carefully and wax it to protect the paint - don't forget the chromed parts.
- The vehicle should be left in a dry, well ventilated garage.

- Do not apply the hand brake. Block the wheels instead.
- Disconnect the battery's negative (-) cable.
- Lift the wiper arms away from the windshield.
- Increase tire pressure to maximum allowed, i.e. 36 psi.
- Open one of the window's slightly for ventilation.
- Ensure that the coolant contains sufficient anti-freeze to provide protection down to -22°F (-30°C). Volvo anti-freeze also provides resistance against corrosion.
- Remove all valuables and lock the car.
- Check the battery voltage at least every 6 weeks.

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Wheels and tires

pg. 67 Wheels and tires

Wheels and tires

The handling and riding comfort of the vehicle is dependent on the inflation pressure and the type of tires fitted. Read the following pages carefully.

[pg. 68](#) General

[pg. 69](#) Tread wear indicators

[pg. 70](#) Inflation pressures

pg. 68 Wheels and tires

General information

Your vehicle is equipped with 185/65R - 15 87T (GLE) or 195/60R - 15 91H (Turbo) tires.

The tire designation is coded as follows:

185 or 205 = tire width in mm.

65 or 60 = tire profile. This is the relationship (in percent) between the section height and the width of the tire.

R = radial tires.

15 = diameter in inches

91 or 86 = Code number

86 = 1166 lbs. (530 kg)

91 = 1353 lbs. (615 kg)

T or H = indicates the max. speed the tire is intended for.

(T = 118 mph = 190 km/h)

(H = 130 mph = 210 km/h)

The tires have good road holding characteristics and offer good handling on dry and wet surfaces. It should be noted however that the tires have been developed to give these features on snow/ice-free surfaces. For optimum road holding on icy or snow covered roads - we recommend suitable winter tires. When replacing tires, be sure that the new tires are the same size (designation), type (radial) and preferably from the same manufacturer, on all four wheels. Otherwise there is a risk of altering the car's road-holding and handling characteristics.

NOTE: When storing wheel/tire assemblies (e.g. winter tires and wheels), either stand the assemblies upright, or suspend them off the ground. Laying wheel/tire assemblies their sides for prolonged periods can cause wheel and/or tire damage.

pg. 69 Wheels and tires

Wear indicator

The tires have a so-called "wear indicator" in the form of a number of narrow strips running across or parallel to the tread. When approx. 1/16" (5 mm) is left on the tread, these strips show up and indicate that the tire should be replaced.

Tires with less than 1/16" (1.5 mm) tread have a very poor grip in rain or snow.

When replacing worn tires, it is recommended that the tire be identical in type (radial) and size as the one being replaced. Using a tire of the same make (manufacturer) will prevent alteration of the driving characteristics of the vehicle.

To improve tire economy:

- Maintain correct tire pressure.
- Drive smoothly: avoid fast starts, hard braking and tire screeching.
- Tire wear increases with speed.
- Do not change wheel location unless necessary.
- Correct front wheel alignment is very important. Unbalanced wheels impair tire economy and driving comfort.
- Unbalanced wheels impair tire economy and driving comfort.
- Hitting curbs or potholes can damage the tires and/or wheels permanently.

Flat spots

All tires become warm during use. After cooling, when the vehicle is parked, the tires have a tendency to distort slightly, forming flat spots. These flat spots can cause vibrations similar to the vibrations caused by imbalanced wheels.

They do, however, disappear when the tire warms up. The degree to which the flat spots form depends on the type of cord used in the tire. Remember that, in cold weather, it takes longer for the tire to warm up and consequently longer for the flat spot to disappear.

Snow tires, studded tires *

Tires for winter use:

Use snow tires fitted to the standard wheels rims or wheel rims (preferably steel) designed for the 760. Do not mix tires of different design, as this could negatively affect overall tire road grip especially during slippery road conditions!

Studded tires should be run-in 300-600 miles (500-1000 km) during which the car should be driven as smoothly as possible to give the studs the opportunity to seat properly in the tires. The car tires should have the same rotational direction throughout their entire lifetime. In other words, if you wish to rotate the wheels, make sure that the same wheels are always on the same side of the car.

Tire chains can only be used on the rear wheels if the chains do not project too far from the tire and chafe against the brake caliper or other components.

Strap-on emergency chains must not be used since the clearance between the brake caliper and the wheel rim is inadequate.

WARNING!

Special wheel rims for air dams

Only special wheel rims, tested and approved by Volvo, are suitable for use with the air dam installed on the 760.

pg. 70 Wheels and tires

Checking and correcting tire pressure

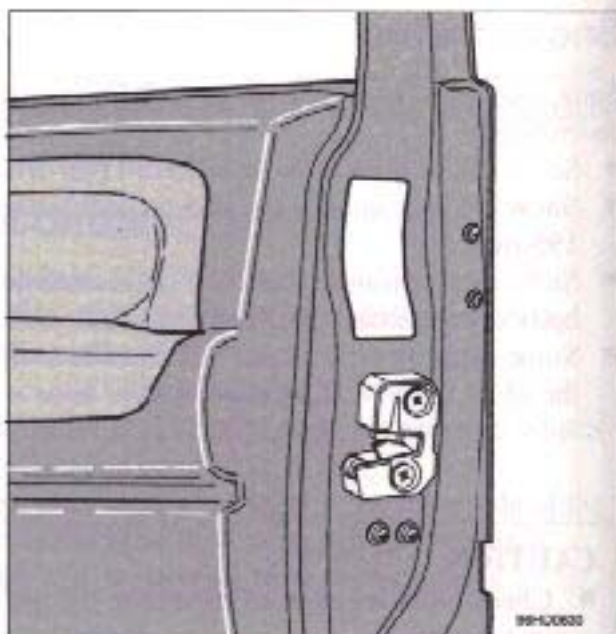
Check the tire pressure when refueling.

The tire pressure should be corrected only when the tires are cold. With warm tires, correct only when the pressure is too low. The tire temperature rises after driving just a few miles.

Vehicle Loading

The tires on your Volvo will perform to specifications at all normal loads when inflated as recommended on the tire information label located on the rear facing side on the right front door. This label lists both the tire and vehicle design limits.

Do not load your car beyond the load limits indicated.



Located on rear edge of right front door

 A sample tire pressure label from Volvo. It contains the following information:

VEHICLE CAPACITY		OCCUPANTS		COLD TIRE PRESSURE	
WEIGHT		FRT	RR	TOTAL	
MAX		2	3	5	PSI
LOAD					
RECOMMENDED FOR FUEL ECONOMY					
OPTIONAL TIRE DATA:					
TIRE		2	1	3	PSI
SIZE					
IF TIRE ARE FOR TUBE TYPE, UNLESS INDICATED BY THE TIRE MANUFACTURER, USE TUBE TYPE					
	SIZE	SPRNG	WTR	SHOULDR	PSI
				MEASURE	
SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION					
VOLVO					

(Sample tire pressure label)

(Sample tire pressure label)



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In case of emergency

pg. 71 In case of emergency

Even if you maintain your car in good running condition, there is always the possibility that something might go wrong and prevent you from driving, such as a punctured tire, blown fuse or bulb, etc. For additional information, see section "ON CALL Road Assistance".

[pg. 72](#) Changing a wheel

[pg. 74](#) Special spare tire

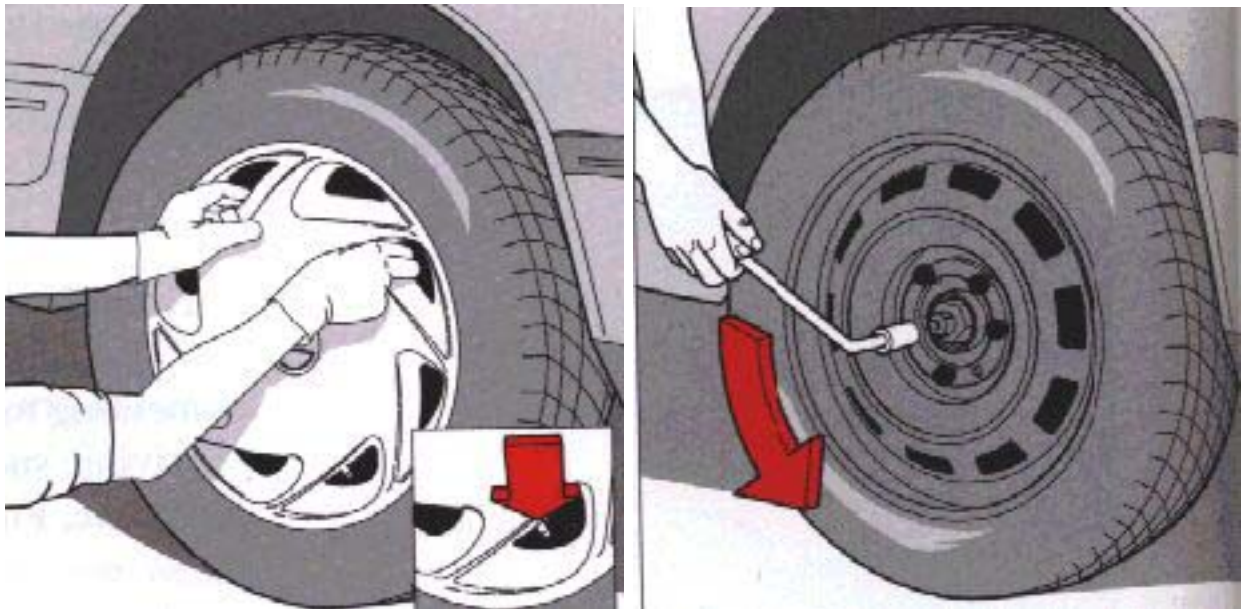
[pg. 75](#) Replacing bulbs

[pg. 82](#) Replacing fuses

[pg. 85](#) Replacing wiper blades

[pg. 86](#) Troubleshooting

pg. 72 Wheel changing



Changing a wheel

On sedans the spare wheel is located in the trunk, beneath the carpet. The jack is attached to the rear of the trunk and the toolbox is located to the right.

On wagons, the spare tire and the jack are located beneath the floor mat in the large storage bin. Always secure the spare tire and the jack to prevent them from rattling.

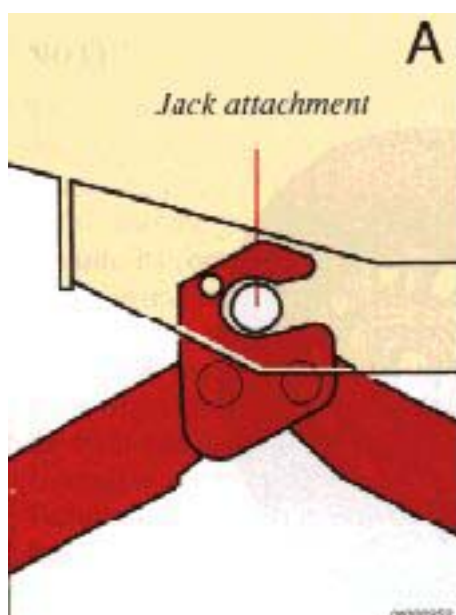
Before using the jack, make sure the car is standing on firm, level ground. Apply the parking brake and place the transmission selector lever in position P. Block the wheels standing on the ground with wooden blocks or large stones.

- Remove the wheel cap, using the screwdriver in the tool kit.
- With the car still on the ground, use the box wrench from the tool kit to loosen the wheel nuts 1/2 - 1 turn. Turn the nuts counterclockwise to loosen.

NOTE:

To avoid excessive wear and the necessity of rebalancing, mark and reinstall wheels in same location and position as before removal. To lessen the chance of imbalance, each wheel hub is equipped with a guide stud to ensure that a removed wheel can be reinstalled in its original position (as when changing over to winter tires/wheels).

pg. 73 Wheel changing (cont.)





There is a jack attachment adjacent to each wheel location. Hang the jack from the attachment as shown in the illustration and crank while simultaneously guiding the base to the ground. Before raising the car check that the jack is still correctly positioned in the attachment. Now raise the vehicle until the wheel is free of the ground. Unscrew the wheel nuts completely and carefully remove the wheel so as not to damage the tread of the studs.

WARNING!

- The jack's hook engage the bar in the jack attachment (A). The car's weight must not rest on the jack's hook (B).
- Be sure the jack is on a firm, level, non-slippery surface.
- Never allow any part of your body to be extended under a car supported by a jack.
- Use the jack intended for the car when replacing a wheel. For any other job, use stands to support the end of the car being worked on.
- Apply the parking brake, select position P (automatic transmission).
- Block the wheels standing on the ground. Use rigid wooden blocks or large stones.
- The jack should be kept well-greased.

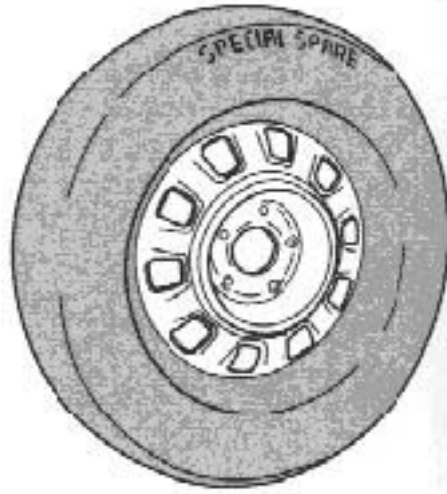
Installing the wheel

Clean the contact surfaces on the wheel and hub. Lift the wheel and place it on the hub. Make sure that you align the wheel with the guide stud on the wheel hub prior to installation. Install the wheel nuts crosswise and tighten lightly. The bevelled side of the nuts should face the wheel. Lower the vehicle to the ground and alternately tighten the nuts to 63 ft. lbs. (85 Nm). Install the wheel cap. Some models have a hub cap that extends to the wheel rim. The valve symbol on the inside of the hub cap should be installed toward the valve.

WARNING!

Current legislation prohibits the use of the "Special Spare" tire other than use as a temporary replacement for a punctured tire. In other words, it must be replaced as soon as possible by a standard tire.

Roadholding, etc., may be affected with the "Special Spare" in use. Do not, therefore, exceed 50 mph (80 km/h).



Special Spare

The spare tire of your car is what is called a "Special Spare". This is embossed on the tire.

The Special Spare has designation 155R15.

Tire pressure must be 40 psi (280 kPa) irrespective of load or in which position the wheel is placed.

In the event of damage to this tire a new one can be purchased from your Volvo dealer.

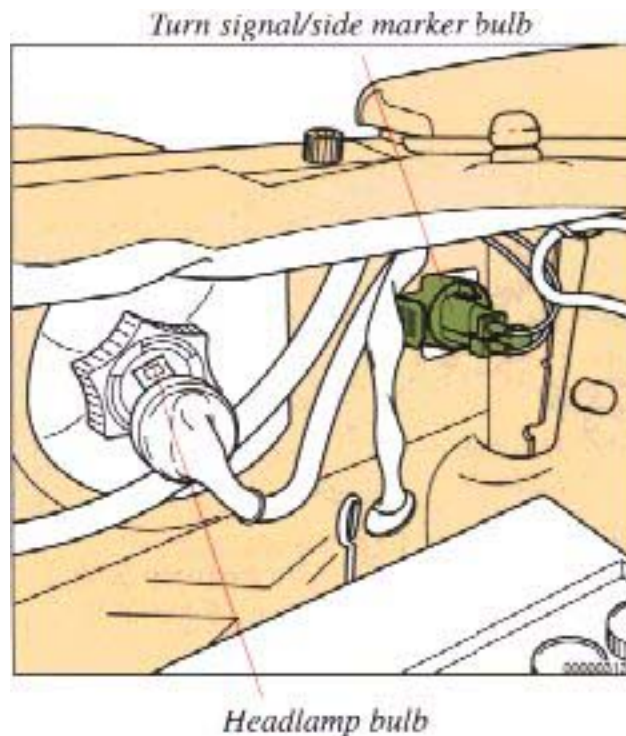


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pg. 75 Replacing bulbs

NOTE!

The method for replacement of bulbs in the various lighting units is shown on the following pages. Make sure when installing bulbs, that the guide pin on the socket fits into its corresponding recess. When installing Halogen bulbs, do not touch the glass with your fingers. The reason for this is that grease, oil or any other impurities can be carbonized onto the bulb and damage the reflector. Use bulbs of correct type and voltage. Failure to do so could cause the bulb failure warning light to activate.

**Headlamps**

- 1 Pull the connector out.
- 2 Loosen the ring by turning it counterclockwise.
- 3 Pull the bulb straight out.
- 4 Replace the bulb and reinstall the unit in the reverse order.

Bulb Power US Bulb No.

Headlamp (45/65) 9004

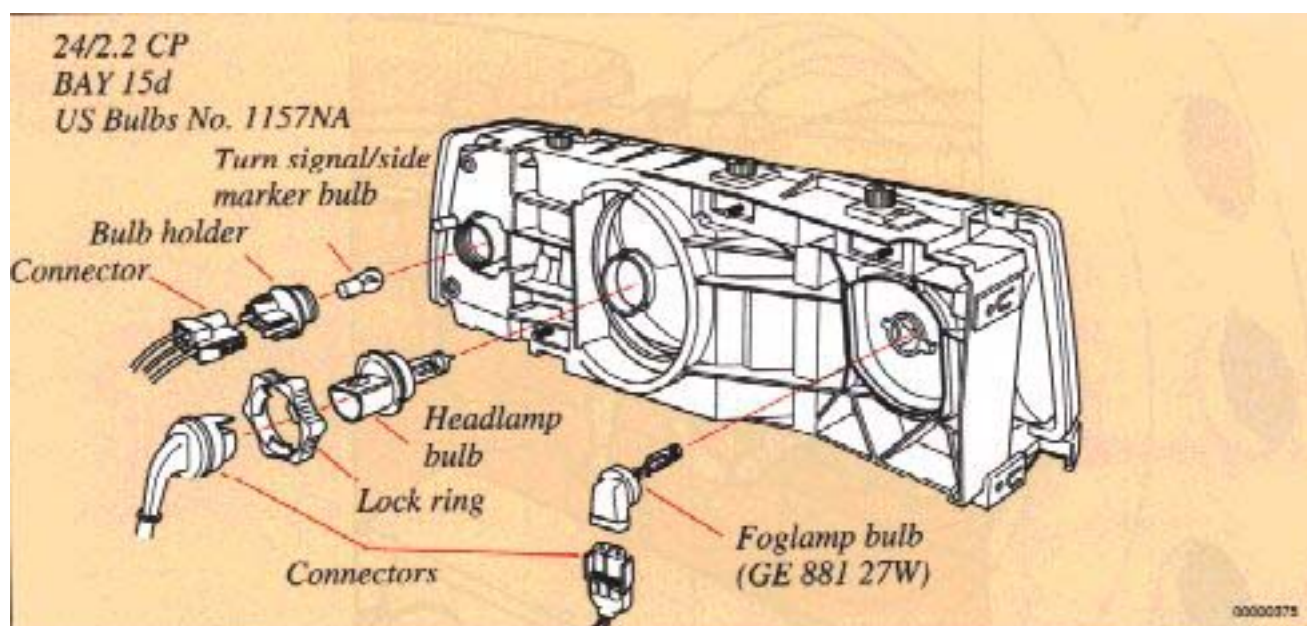
Turn signal/side indicator

- 1 To remove, turn the lamp holder 1/4 turn counter-clockwise.
- 2 Press the bulb in and turn it 1/4 turn counter-clockwise.
- 3 Replace the bulb and reinstall the unit in the reverse order.

Power CP (W) Socket US Bulb No.

24/2.2 (21/5) BAY 15d 1157 NA

pg. 76 Replacing bulbs (cont.)



Access to the bulbs is obtained from the engine compartment. Switch off the lights and ignition key.

Note: It may be necessary to remove the washer fluid reservoir fill tube in order to gain access to the bulb holder.

Fog lamps

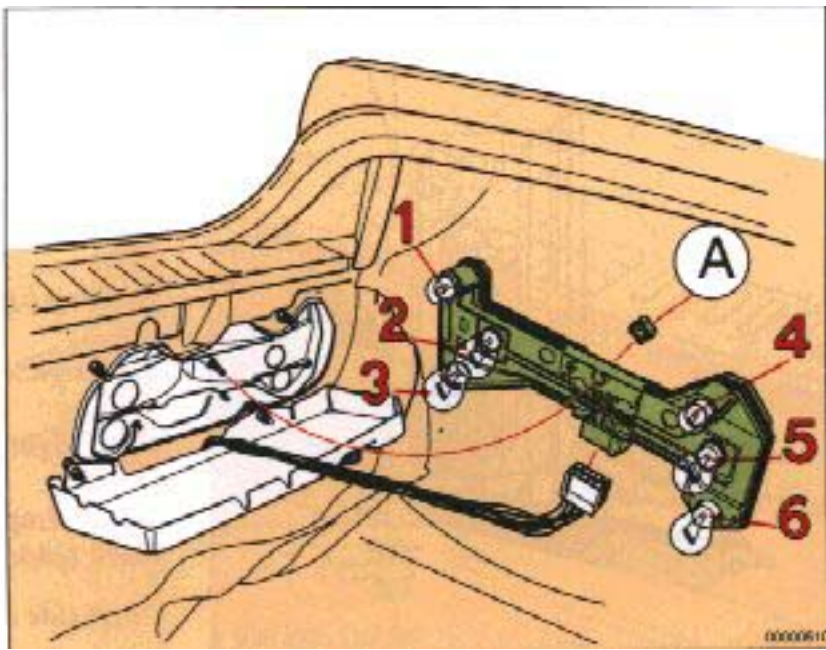
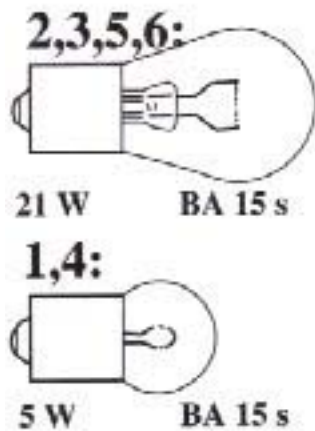
- 1 Turn the lamp holder 1/4 turn counterclockwise

- 2 Remove the bulb from the connector by pushing the catches to the sides
- 3 Replace the bulb and the holder

Note: Reinstall the unit carefully to avoid changing the direction of the beam.

Bulb Power US Bulb No.
Foglamp (27 W) GE881

pg. 77 Replacing bulbs, Sedans



Replacing tail lights bulbs (sedan models)

All tail lamp bulbs are replaced from inside of trunk.

- Unscrew and remove tail lamp inside cover. Note that inside cover is hooked at the lower edge.
- Unscrew the plastic screw and remove bulb holder.
- Depress bulb in bulb holder, turn it slightly counterclockwise, and remove it. To avoid confusion replace the bulbs one at a time.
- Install a new bulb by depressing it in the holder and turning it clockwise. Reinstall the holder in the tail lamp. Check that bulb lights. Reinstall the tail lamp inside cover.

Bulbs Power Socket US Bulb No

CP(W)

1 Tail light 4 (5) BA 15s 67

2 Rear turn signal 32 (21) BA 15s 1156

3 Brake light 32 (21) BA 15s 1156

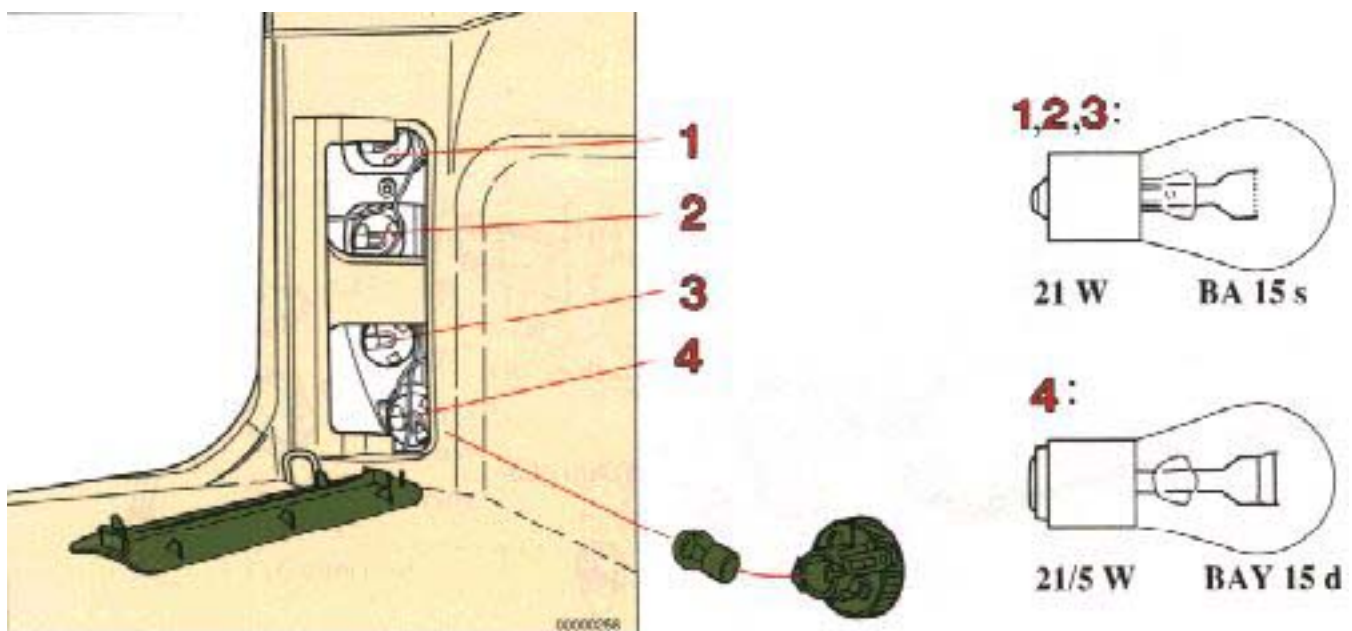
4 Tail light 4 (5) BA 15s 67

5 Back-up light 32 (21) BA 15s 1156

6 Fog light 32 (21) 1156

High-mounted brake light 32 (21) 1156

pg. 78 Replacing bulbs (cont.)



All tail light bulbs are replaced from inside the vehicle

Light Power Socket US

CP(W) Bulb No.

Fog light 32 (21) BA 15s 1156

Back-up lights 32 (21) BA 15s 1156

Turn signals 32 (21) BA 15s 1156

Brake/tail light 32/3(21/5) BAY 15d 1157

Reflector - - -

High-mounted

stop lamp 32 (21) BA 15s 1156

Replacing tail light bulbs (wagon models)

- Turn off the lights
- Remove the cover with a screw driver
- Rotate the bulb holder about 1/4" (0.6 cm) counterclockwise and remove the holder from the tail light cluster.

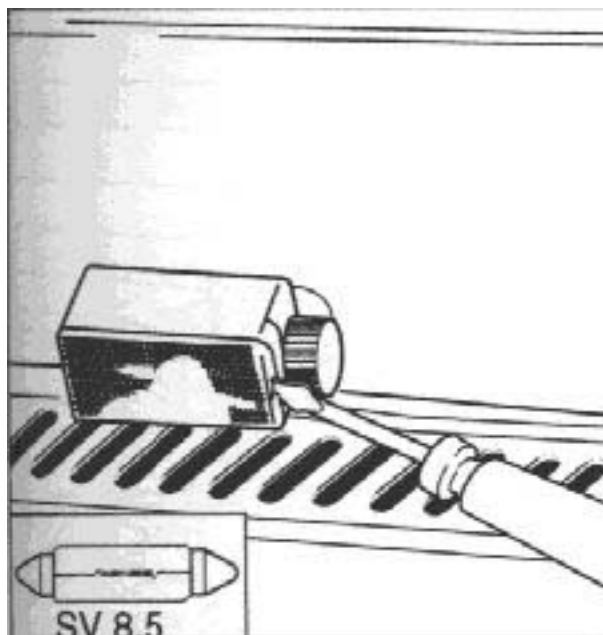
• Gently press the bulb into the holder, then rotate the bulb counterclockwise in order to release it.

• Install a new bulb in the holder and replace the bulb holder in the tail light cluster.

One of the guide lugs on the bulb holder is slightly wider than the other two and, thus, this lug fits into the widest recess only.

- Turn the bulb holder clockwise
- Check that the bulb lights
- Re-install cluster cover

pg. 79 Replacing bulbs

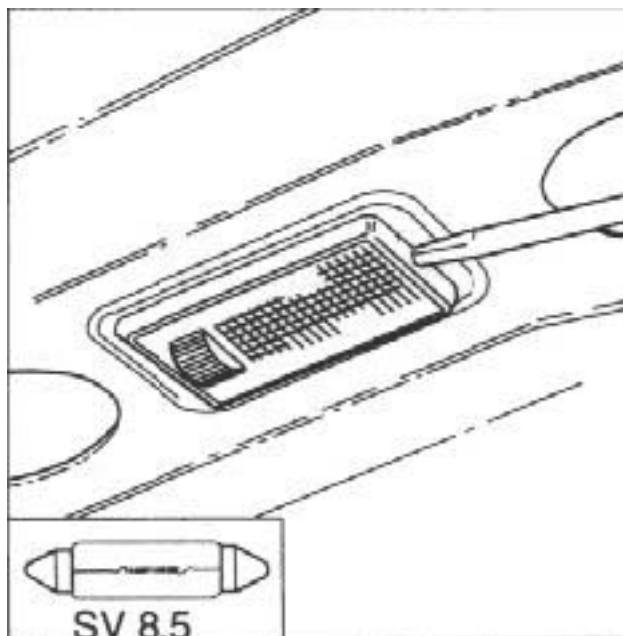


Engine compartment light

Insert a screwdriver and pry off the light assembly. Lift it out to remove. Replace the bulb.

Bulb Power Socket

Engine compartment light 10 W SV8.5



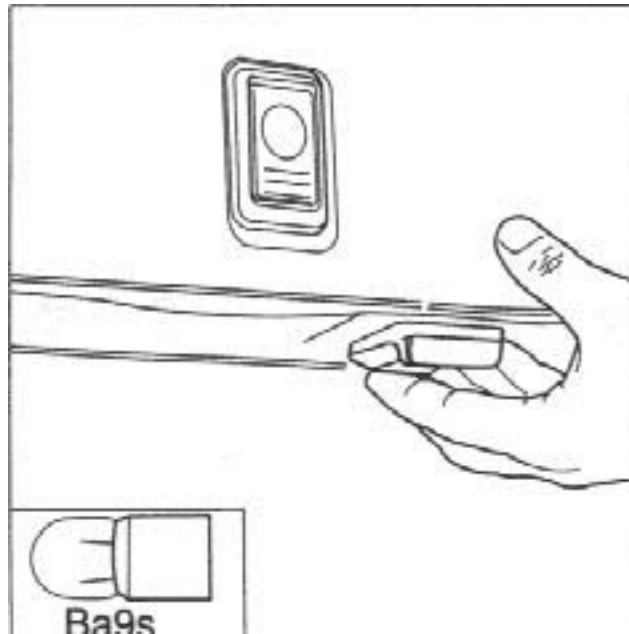
Trunk light (sedan models)

Courtesy light (wagon models)

Depress the catch with a screwdriver and remove the light assembly. Lift it out to remove. Replace the bulb.

Bulb Power Socket

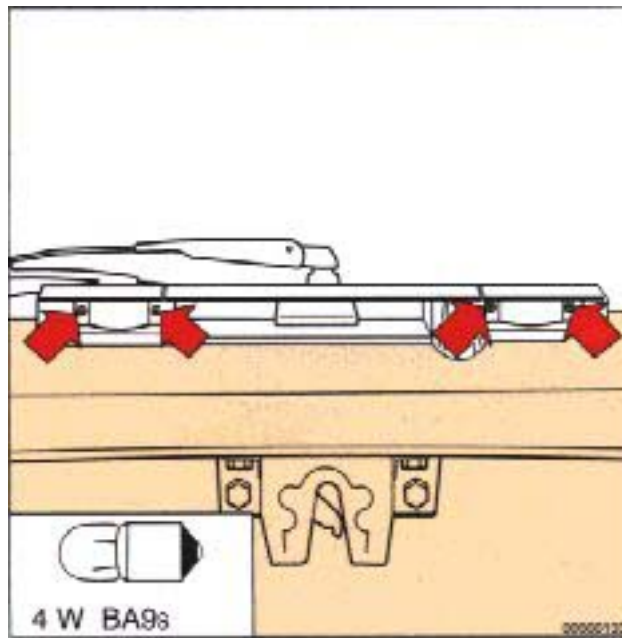
Trunk light 10W SV8.5



License plate light (sedan models)

Slide the bulb housing backwards until it is released from the front edge. Pull out the lamp housing and replace the bulb. Insert the front edge of the lamp housing and press up the rear edge by hand.

Bulbs Power Socket
License plate light 4W Ba9s

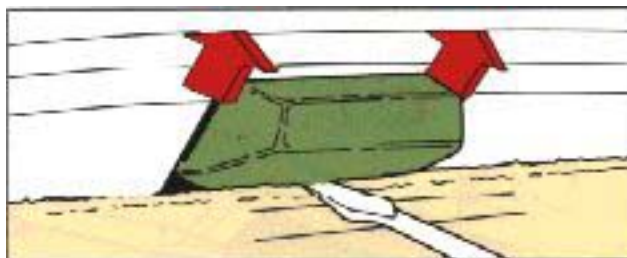


Use Phillips head screwdriver

License plate light (wagon models)

Remove the screws with a Phillips head screwdriver. Remove lamp housing. Depress the bulb and rotate it counter-clockwise. Remove the bulb. Install a new bulb and re-install light housing.

Bulb Power Socket License plate light 4W Ba 9s



Depress catch with a screwdriver (sedans)



Removing cover (wagons)

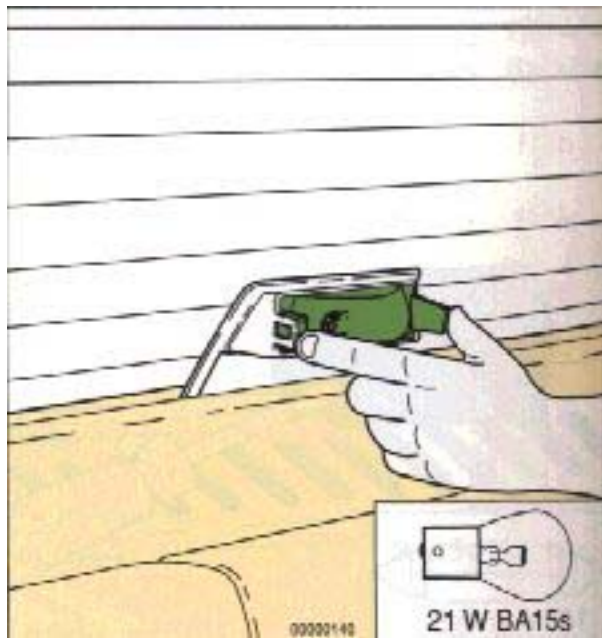
High-mounted stop lamp

To remove:
Turn off ignition.

4-door models
Depress catch with a screwdriver.
Pull the cover upwards to remove it.

Wagon models
Grasp the cover with both hands and pull it towards you.

Bulb Power Socket US Bulb No.
High-mounted 32 (21) Ba 15s 1156
stop lamp



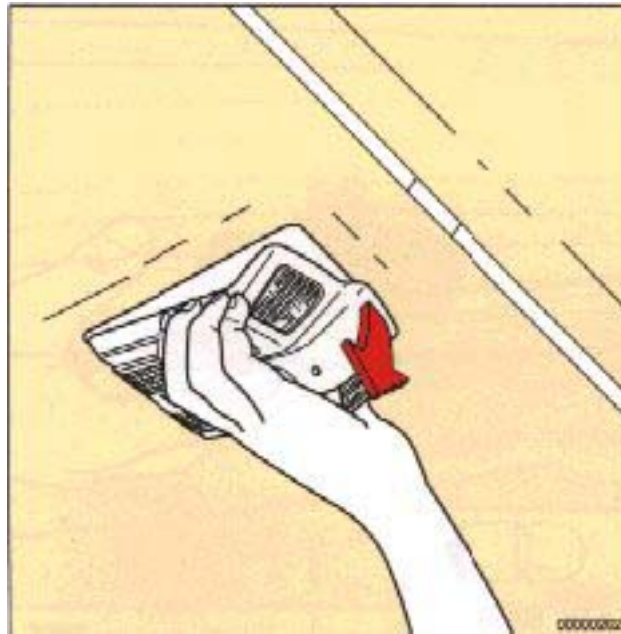
Depress catches

Depress catches and fit new bulb.

To fit:
Fit the reflector and check that the light works.

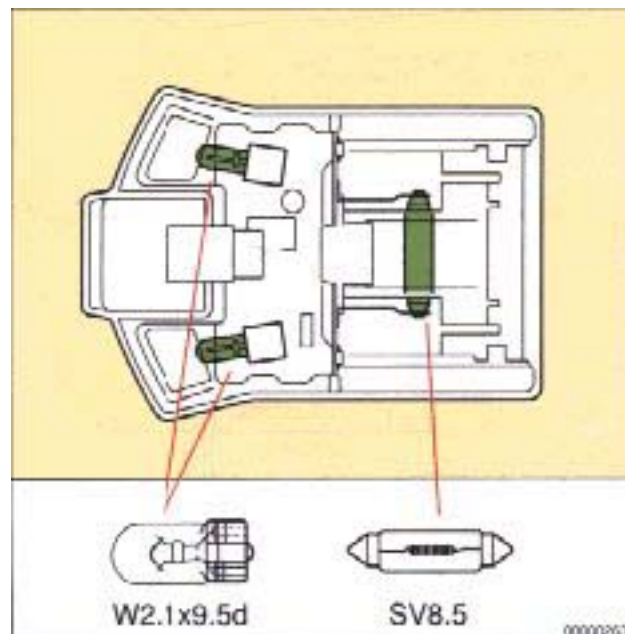
4-door models
Press the cover into position, noting the position of the alignment pin at the top.

Wagon models
Align the catches and press the cover into position.

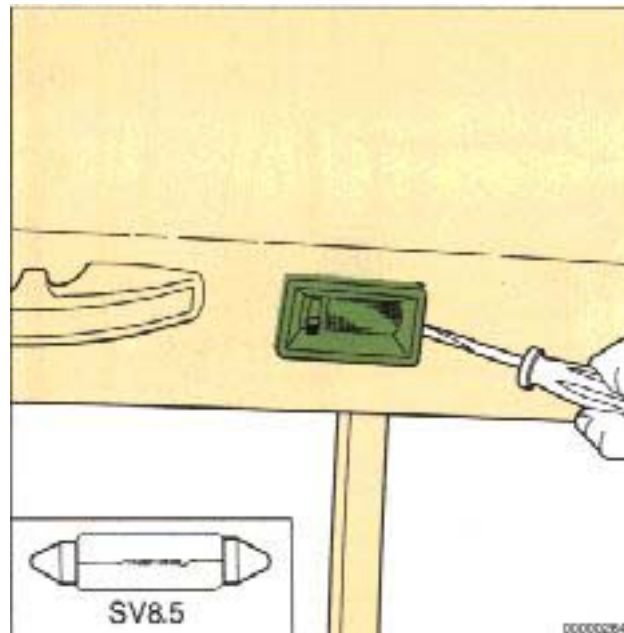


Interior light and reading lights

Take hold of the front section of the light as shown and pull straight down.
Press lens out from inside and replace bulb. Check operation before reinstalling the lamp housing.



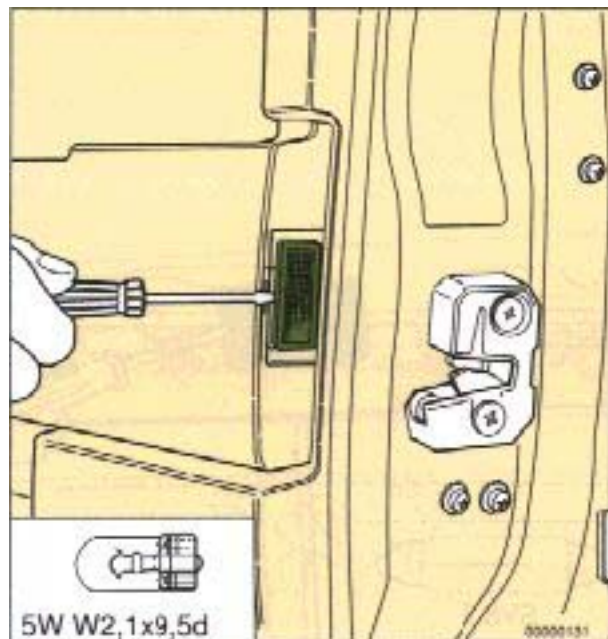
Bulb Power Socket
Interior light 10W SV8.5
Reading light 5W W2.1x9.5d



Reading lamps, rear

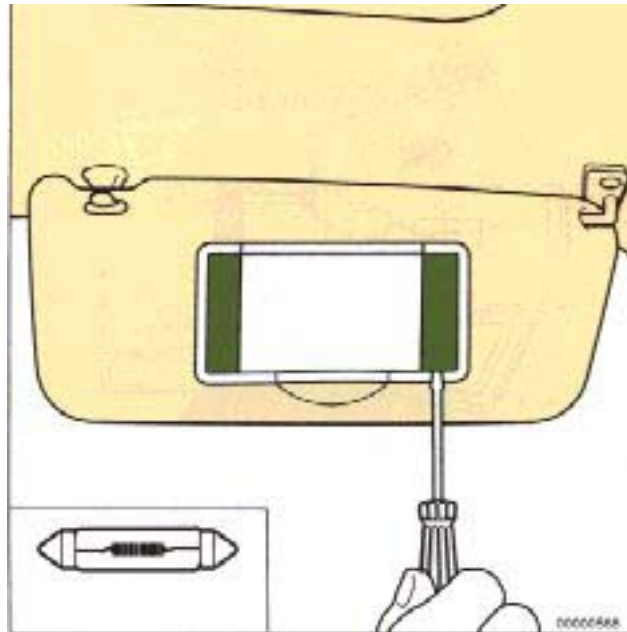
The bulb in the adjustable reading lamps can be changed as follows: insert a screwdriver as shown and twist off the lamp. Withdraw the bulb and fit a new one.

pg. 82 Replacing bulbs, Fuses



Door Warning lamps

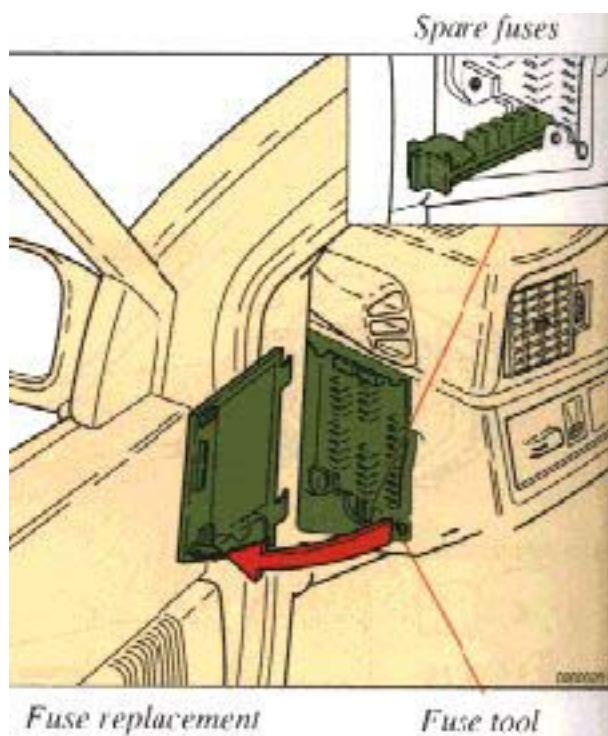
All doors are equipped with red warning lamps. To replace a bulb, insert a screwdriver as shown in picture and gently turn it to remove the lens. Withdraw the bulb, replace it and re-insert the lens



Insert screwdriver and turn

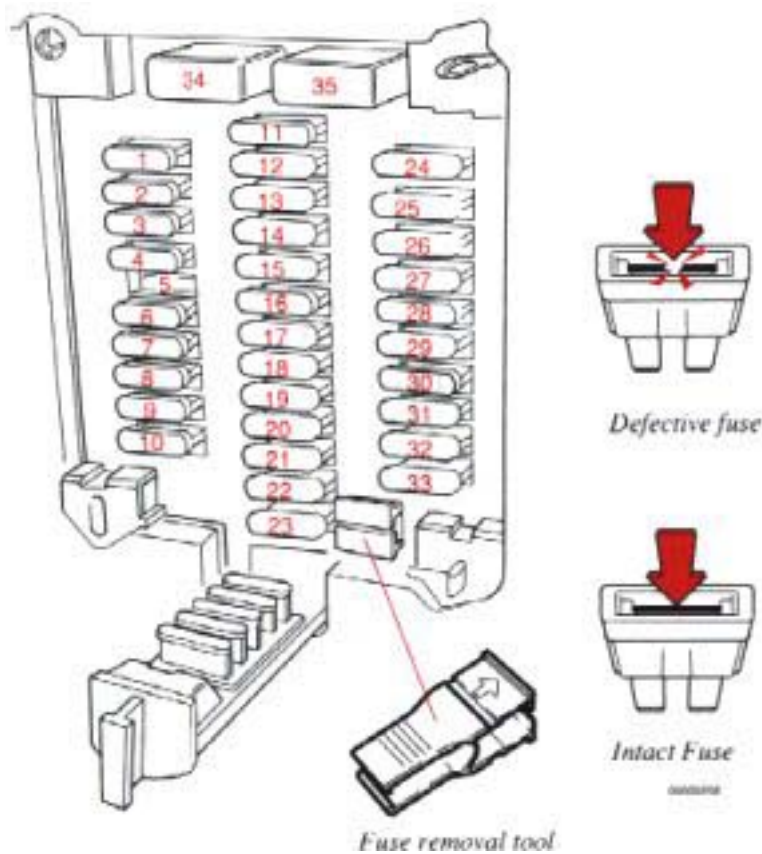
Vanity mirror

Insert a screwdriver and turn it to remove the lens. Replace the bulb and press the lens back into place.



Fuse replacement

If an electrical component fails to function, it is likely that a fuse has blown due to an overloaded circuit. The fuse box is located on the far left side of the dashboard. SPare fuses and the fuse tool are located in an illuminated compartment in the fuse box. To gain access to the fuses, remove the cover. When replacing the cover, push in the front edge first and then press into place.



The easiest way to see if a fuse is blown is to remove it. Refer to the list of fuses on the inside of the fuse box to cover to see which one should be examined.

Pull the fuse straight out. From the side, examine the curved metal wire to see if it is broken. If so, put in a new fuse of the same color and amperage (written on the fuse). Spare fuses are stored in a lit compartment in the fuse box:

1 x 15A (blue), 1 x 25A (pale yellow), 1 x 30A (green)

If fuses burn out repeatedly, have the electrical system tested at a Volvo dealer. If you find it difficult to remove a fuse, you will find a special fuse tool clipped in the fuse box.

pg. 84 Location*

Location* Amperage

1 Left parking lights, license plate light,
rear parking lights 10

2 Right parking lights 10

3 Left high beam 15

4 Right left beam 15

- 5 SRS test
- 6 Left low beam 15
- 7 Right low beam 15
- 8 Front fog lights 15
- 9 Rear fog lights 10
- 10 Instrument illumination: ashtray front and rear,
heater control panel, switches and seat belt light 5
- 11 Back-up lights, turn signals, cruise control 15
- 12 -
- 13 Heated rear window, heated door mirrors 25
- 14 Overdrive, relay for electrically operated
sun roof, electrically operated windows 10
- 15 -
- 16 -
- 17 -
- 18 Radio/cassette tape player 5
- 19 ECC, electrically operated side door mirrors,
Rear window wiper/washer (wagons) 15
- 20 Windshield wipers/washers, horn 25
- 21 Constant idle speed system 5
- 22 -
- 23 -
- 24 -
- 25 Hazard warning flashers, central locking
system 25
- 26 CLock, interior lighting, door open warning
lights, glove box, cargo space and vanity mirror 10
- 27 Brake lights 15
- 28 Heater fan, air conditioning 30
- 29 Electrically operated antenna,
electrical connector for trailer 30
- 30 Fuel pump (tank), electrically heated
Lambda sond 10
- 31 Fuel injection, fuel pump (main) 25
- 32 Radio/amplifier 15
- 33 Radio/cassette tape player 10
- 34 Electrically operated windows,
electrically operated sun roof 30
- 35 Electrically heated front seats,
electrically operated front seats 30

Note: The ABS system is protected by an additional 10 A fuse which is located under the instrument

panel to the left of the steering wheel.

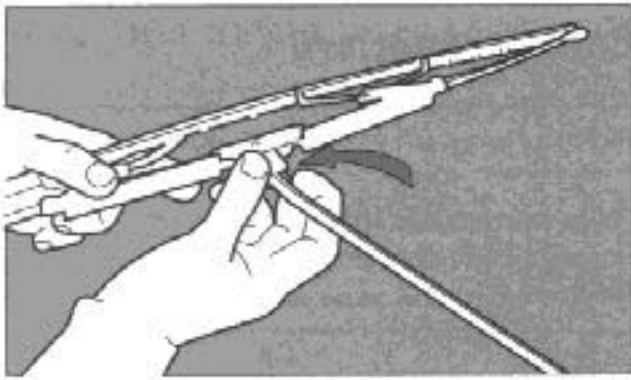
Note: Refer to fuse box cover label for your vehicle's specific fuse usage.

Note: Fuses No. 34 and 35 are circuit breakers which activate when overloaded. After 20 seconds, the circuits should have cooled down and function normally.

For more detailed information concerning function and location of relays, fuses, etc., refer to the Volvo Service Manuals. These can be purchased directly using the Service Literature Brochure/Order Form or through your Volvo dealer.

* Some of the equipment/systems listed may be available on certain models only and/or as optional items only.

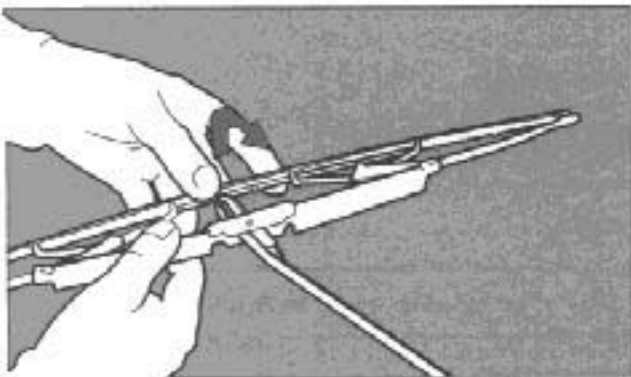
pg. 85 Replacing wiper blades



Replacing wiper blades

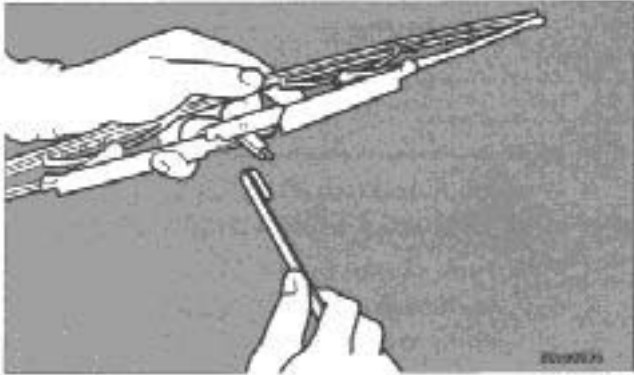
Lift the wiper arm off the windshield and hold blade at right angles to arm. Pinch the end of the plastic clip located at the back of the arm.

Slide the wiper blade along the arm to release it from the hook.



Install new blade (installation is the reverse of removal) and make sure that it is properly attached to the wiper arm.

For reasons of safety, you should change the windshield wiper blades as soon as they start to leave marks on the windshield or fail to wipe efficiently and cleanly.



The wiper blades can be cleaned by using a stiff-bristle brush and warm, soapy water.



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pg. 86 Service diagnosis

The diagnoses outlined below are intended to serve only as guides to locate and temporarily correct minor faults. Causes of unsatisfactory performance should be investigated and corrected by your Volvo dealer only. See section "Road Assistance".

Starter fails to operate (or operates very slowly)

Weak battery or dead cell.

With the starting (ignition) switch in the "Driving" or "On" position, check to see if the warning lights on the dashboard come on and if they stay on when the starter is engaged. If the lights do not come on or if they go off when the starter is engaged, the battery is discharged, or see below.

Loose or corroded battery cable terminals.

Check battery terminals and clamps. Clean or replace if necessary. Check that the starter cable is secure at its terminals

The ground strap, which connects the body to the rear of the engine, should also be checked for corrosion or looseness.

Open circuit between starting (ignition) switch and starting (ignition) switch terminal on starter. The circuit is closed if a clicking sound is heard from the starter when it is engaged. If no clicking sound is heard, check that the blue wire at the starter is secure. If still no clicking sound is heard, the starting (ignition) switch or the wire is defective.

Starter motor defective.

If the above checks have been performed, and no fault is evident, the starter may be defective.

NOTE: In this case the headlight intensity will not decrease when the starter is engaged

pg. 87 Service diagnosis (cont.)

Starter motor operated but engine does not start

Intake system leaking.

Check vacuum hose connections at manifold and auxiliary air valve.

No fuel reaching engine.

Check for fuel in the tank.

Check fuses No. 30 and 31.

No spark.

If there is no spark, check that the high tension lead from the coil to the distributor cap is connected and that the wires to the distributor and coil are connected.

Spark plugs high tension leads or distributor cap is wet or defective.

Clean the parts with a dry cloth or spray with a moisture remover. Replace defective or worn parts.

If no fault is found following the above steps, contact your Volvo dealer.

Excessive fuel
consumption

Fuel lines leaking.

Check tightness.

Spark plugs worn.

Replace plugs

pg. 88 Service diagnosis (cont.)

Erratic idle
(misfiring)

Intake system leaking.

Check vacuum hose connections to manifold and auxiliary air valve.

Spark plugs high tension leads or distributor cap worn (defective).

Clean distributor cap and leads, check the cap for cracks. Replace defective or worn parts.

Worn spark plugs.

Remove. Clean or replace spark plugs.

Engine stalls at irregular intervals

Defective wires.

Check wire terminals at: fuel pump, fuse No. 30 and 31, coil, distributor, ignition switch and relays.

Intake system leaking.

Check vacuum hose connections at manifold and auxiliary air valve

Fuel filter clogged.

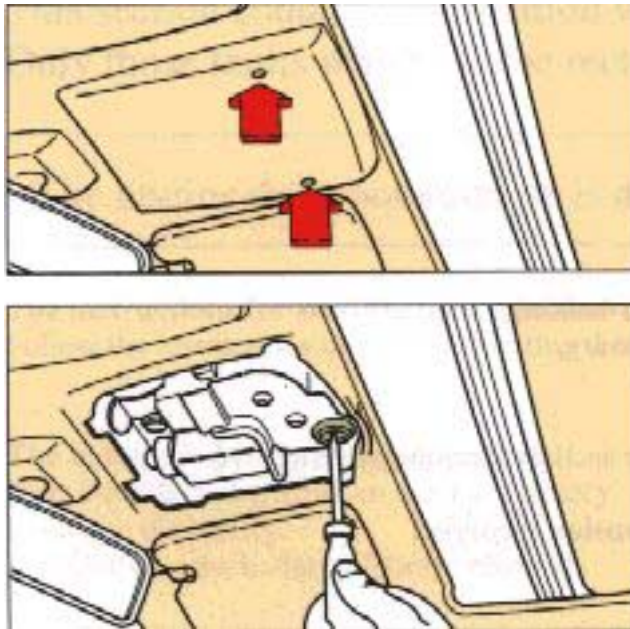
Clean fuel tank filter and replace line fuel filter.

Misfiring at highway driving speed

Spark plugs fouled.

Drive the vehicle in a lower gear and keep the engine rpm higher for a few miles in order to remove carbon deposit on the spark plugs. If this procedure is not effective, clean or replace the spark plugs. Please be aware that misfiring spark plugs can cause damage to the catalytic converter.

pg. 89 Emergency sun roof operation



Emergency sun roof operation

If, because of an electrical fault (e.g. a blown fuse), it is not possible to operate the sun roof electrically, then it is possible to operate it manually. First, using a Phillips-head screwdriver, remove the two screws that secure the sun roof motor cover to the headliner. Then, using a screwdriver, depress the white plastic clutch pin in the center of the motor screw (see illustration) and turn the screw to close or open the roof as desired.

No current to the sun roof motor

The overload protector (no. 34 in the fuse box) has engaged. Wait approximately 20 seconds for the overload protector to cool down. Check fuse number 14.



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Car care

pg. 91 Car care

Car care includes not only maintaining the appearance of the car, but also protecting the car exterior from the effects of air pollution, rain and mud.

The rustproofing compound under the car should be checked regularly and, if necessary, damaged areas should be repaired.

The paintwork should also be touched up immediately, if damaged, to prevent rust formation.

[pg. 92](#) Cleaning the upholstery

[pg. 93](#) Rustproofing

[pg. 95](#) Paintwork damage

[pg. 97](#) Washing the car

pg. 92 Cleaning the upholstery

Cleaning the upholstery

Generally, the fabric can be cleaned with soapy water or a detergent. For more difficult spots caused by oil, ice cream, shoe polish, grease, etc., use a stain remover.

The plastic in the upholstery can be washed.

To clean leather upholstery, use soft cloth and mild soap solution, using, for instance, common bath soap.

For more difficult spots, consult your Volvo dealer.

On no account must gasoline, naphtha or similar cleaning agents be used on the plastic or the leather since these can cause damage.

Cleaning the seat belts

Clean only with lukewarm water and mild soap solution.

Cleaning floor mats

The floor mats should be vacuumed or brushed clean regularly, especially during the winter when they should be taken out for drying. Spots on textile mats can be removed with a mild detergent.

Bear in mind

- Take extra care when removing stains such as ink or lipstick since the coloring can spread.
- Use solvents sparingly. Too much solvent can damage the seat padding.
- Start from the outside of the stain and work toward the center.

Warning! Do not use cleaning solvents to clean the seat belts.

pg. 93 Rustproofing

What causes rust

The two most common causes of rust to your car are:

1. The accumulation of road dirt and moisture in hard-to-get-at cavities and other areas under the car.
2. The removal of paint and protective coatings on the outside of the car and underneath through damage by stones, gravel or minor accidents.

Several factors influence the speed at which corrosion will occur:

1. The length of time various parts of a car stay wet. Parts of the car filled with road dirt and water remain damp for long periods of time even after other parts have dried. Particular attention should be paid to the underside of the car and floor sections inside. The floor sections stay wet because moisture collects and remains under the floor matting. Drain holes located at the bottom of the doors can get clogged with dirt, trapping water inside the door and causing the door to rust through at the bottom.
2. Corrosion will be accelerated in areas of higher relative humidity, especially where temperatures often stay above the freezing point and where the atmosphere is affected by industrial pollution, or where salt

is used for de-icing the roads.

Where parts of the car are covered with road dirt containing road salt, corrosion will be accelerated at lower relative humidity than if the surface were clean.

3. Increased temperature will cause an accelerated rate of corrosion of those parts of the car which are not well ventilated to permit quick drying.

4. Industrial pollution and the presence of salt will also accelerate the deterioration of paint finishes.

The foregoing identifies the need for every car owner to keep his or her car-particularly the underside-as clean and dry as possible and to repair any minor damage to paintwork and protective coating as soon as possible.

The need is more important in those areas where road salt is used for de-icing, the relative humidity is higher, air pollution is present, and temperatures regularly stay above freezing.

Rustproofing, inspection and touching-up

Your Volvo was carefully and thoroughly rustproofed at the factory.

The underbody and wheelhousings were sprayed with a thick, durable rustproofing compound and the beams, internal cavities and end sections were sprayed with a low viscous, penetrating rustproofing agent.

There are two very effective methods of maintaining this protection:

- Keep your car clean.
Clean the underbody, wheelhousings and the edges of the fenders using water at high pressure.
- Inspect and touch-up the rustproofing if necessary.

The invisible (internal) rustproofing

As part of your maintenance schedule, it is important that the invisible rustproofing (used for beams, internal cavities and end sections) be retreated first after 36 months and, thereafter, every 24 months. Bear in mind, if good results are to be obtained, that these sections must be treated with a fine spray of Volvo-approved rustproofing compound by your authorized Volvo dealer.

pg. 94 Rustproofing (cont.)

The visible rustproofing

The visible (external) rustproofing must be inspected by an authorized Volvo dealer at least once a year.

If it is necessary to touch-up the rustproofing, this should be done immediately to prevent moisture penetration. Wash and dry thoroughly before touching up. Use spray-on or brush-on rustproofing compounds. An oil can with a long flexible spout may be used for parts which are difficult to reach. There are three different types of rustproofing compounds available:

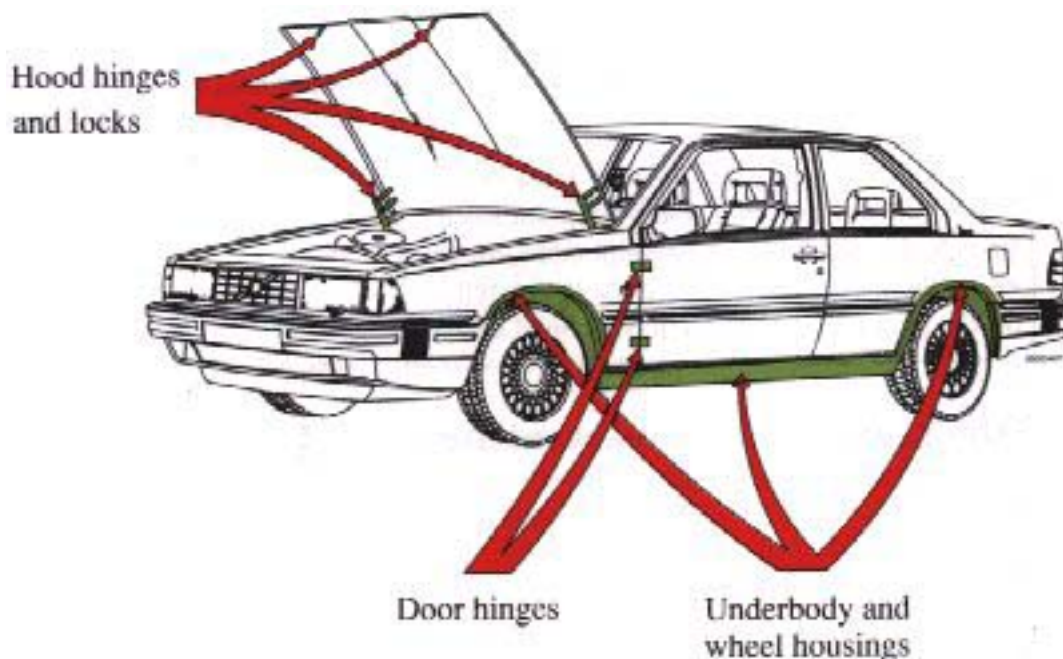
- a. thin (ML), for seams under the car.
- b. thin (transparent) for visible parts.
- c. thick, for parts on the underbody and wheel housing which experience most wear.

Parts of the car which may need to be touched up and the recommended rustproofing compound are:

- visible welded seams and panel seams-(thin)
- underbody and wheel housings-(thick)
- hood -(thin)
- door hinges-(thin)
- hood hinges and locks-(thin).

After completion of all work on the vehicle, remove excess rustproofing compound with a cloth soaked in kerosene.

The sheet metal surfaces of the engine compartment are protected by a transparent wax-based rustproofing compound. The compound withstands normal washings without deterioration. Mineral based solvents will, however, dissolve the compound, especially so if they contain emulsifiers. In such cases the wax protection should be renewed.



Paint damage requires immediate attention to avoid rusting. Make it a habit to check the finish regularly; when washing the car for instance. Touch up if necessary.

Paint repairs require special equipment and skill. Contact your Volvo dealer for any extensive damages.

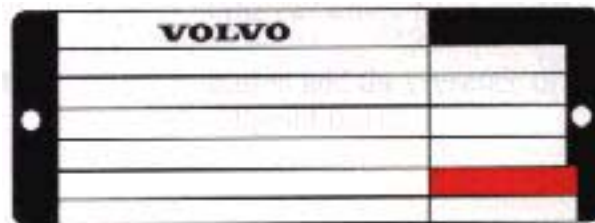
Minor scratches can be repaired by using Volvo touch-up paint.

NOTE: When ordering touch-up paint from your Volvo dealer, use the paint code indicated on the model plate. The plate is located on the panel above the right-side head lights.

Minor stone chips and scratches

Material:

- Primer - can
- Paint - can or touch-up bottle
- Brush
- Masking tape



NOTE: When touching up the car, it should be cleaned and dry. The surface temperature should be above 60°F (+15°C).

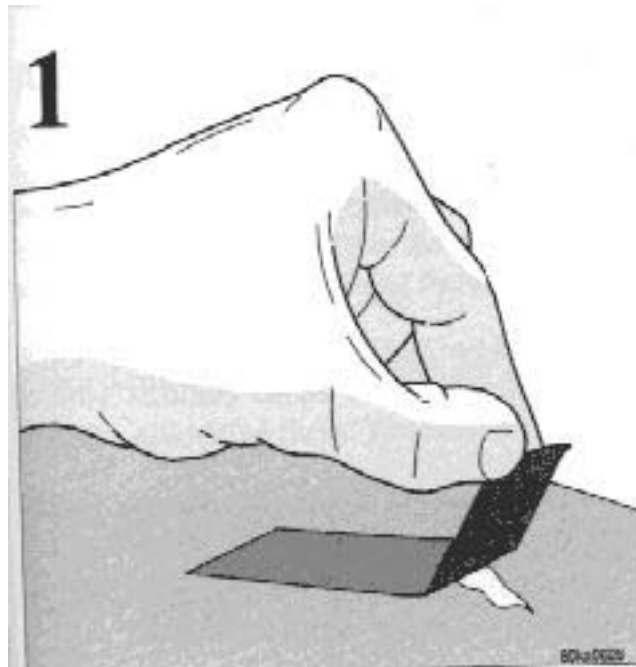
Scars on the surface

If the stone chip has not penetrated down to the metal and undamaged layer of paint remains, the touch-up paint can be applied as soon as the spot has been cleaned.

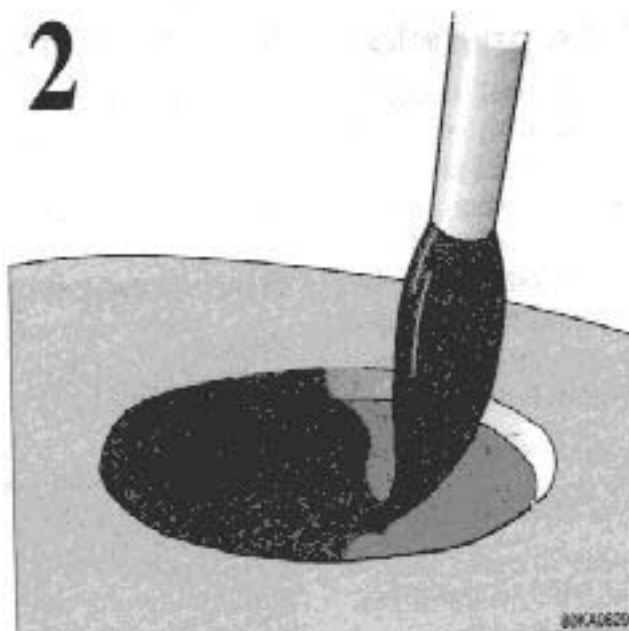
Deep scars

If the stone chip has been penetrated down to the metal, proceed as follows:

1 Place a strip of masking tape over the damaged surface. Pull the tape off so that any loose flakes of paint adhere to it.



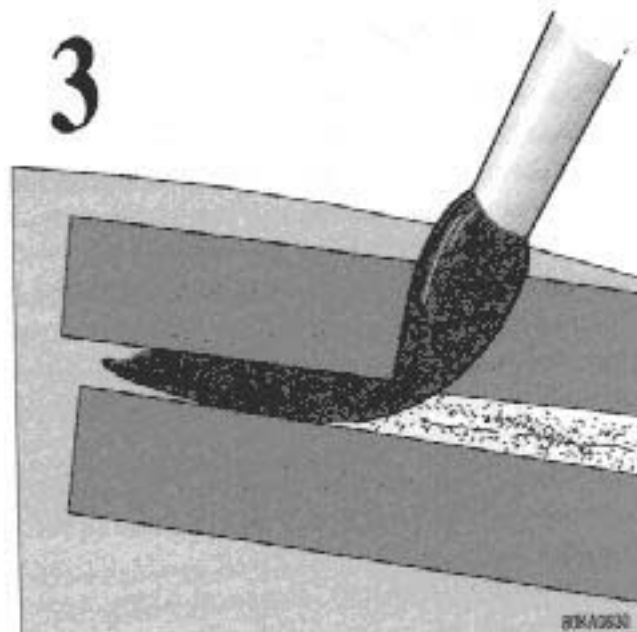
2 Thoroughly mix the primer and apply it with a small brush.



When the primer surface is dry, the paint can be applied using a brush.

Mix the paint thoroughly: apply several thin paint coats and let dry each application.

pg. 96 Paint touch-up (cont.)



3 If there is a longer scratch, you may want to protect surrounding paint by masking it off.

Touching up damaged paint on fender edges and sills

Material:

- Primer - spray can
- Paint - spray can
- Masking tape

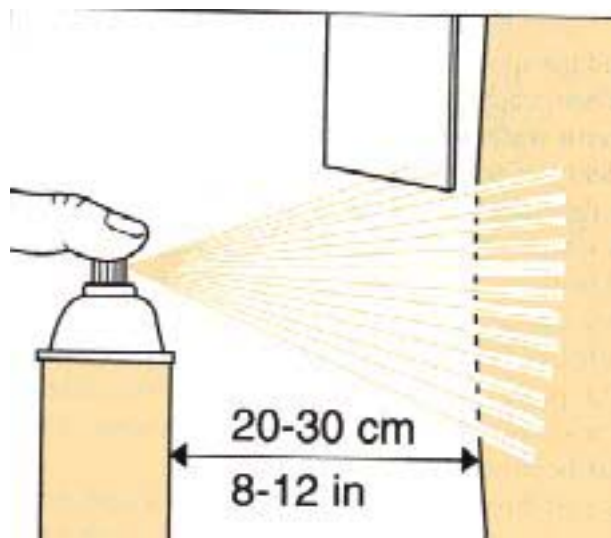
NOTE:
When touching up the car, it should be well cleaned and dry and have a temperature exceeding 60°F (+15°C).

When large surfaces have to be repainted suitably mask the surrounding area with masking tape and paper.

Remove this masking as soon as the final coat has been sprayed on, before the paint dries.

Touching up is as follows:

1 Remove loose flakes of paint with masking tape.



2 Move the can slowly and regularly from side to side, about 8-12 in. (20 - 30 cm) from the surface.

WARNING!

Spray painting should be done in a well ventilated and dust-free area.

3 When the primer has dried, apply the surface enamel in the same way. Spray on several times and allow the paint to dry a minute or so between each application.

pg. 97 Washing

Washing the car

The car should be washed at regular intervals since dirt, dust, insects and tar spots adhere to the paint and may cause damage.

When washing the car, do not expose it to direct sunlight. Use lukewarm water to soften the dirt before you wash with a sponge, and plenty of water, to avoid scratching.

A detergent can be used to facilitate the softening of dirt and oil. A water-soluble grease solvent may be used in cases of sticky dirt.

However, use a washplace equipped with a drainage separator.

Dry the car with a clean chamois and remember to clean the drain holes in the doors and rocker panels.

Tar spots can be removed with kerosene or tar remover after the car has been washed.

After washing lubricate the electrically-operated antenna mast with a cloth soaked in oil.

A stiff-bristle brush and lukewarm soapy water can be used to clean the wiper blades. Frequent cleaning

improves visibility considerably.

Note: It is particularly important to wash the car frequently in the wintertime to prevent corrosion, when salt has been used on the roads.

Also wash off the dirt from the underside (wheel housings, fenders, etc..)

In areas of high industrial fallout more frequent washing is also recommended.

Suitable detergents

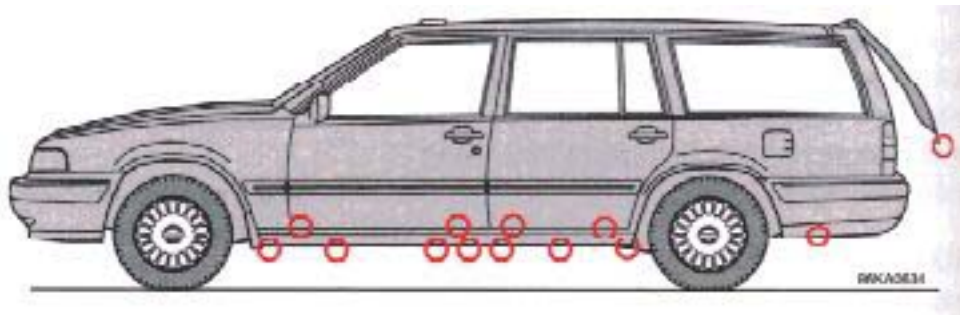
Special car washing detergents or liquid dishwashing detergent can be used. A suitable mixture is about 2.5 fl. oz. (8.5 cl.) of detergent to 2.6 US gal. (10 liters) of warm water. After washing with a detergent the car should be well rinsed with clean water.

Bird droppings

Remove from paintwork as soon as possible. Otherwise the finish may be permanently damaged.

WARNING!

When the car is driven immediately after being washed, carefully apply the brakes a few times in order to remove any moisture from the brake linings.



NOTE: When washing the car, remember to remove dirt from the drain holes in the doors and sills.

pg. 98 Automatic car washing, Polishing and waxing, Chromed parts

Automatic washing - simple and quick

An automatic wash is a simple and quick way to clean your car. Keeping the underbody clean is most important, especially in the winter. Some automatic washers do not have the facilities for washing the underbody.

Before driving into an automatic wash, make sure that the side view mirrors, auxiliary lamps, etc., are secure, otherwise there is risk of the machine dislodging them. You should also lower the antenna. We recommended that you do not wash your car in an automatic wash during the first six months (because the paint will not have hardened sufficiently).

Polishing and waxing

Normally, polishing is not required during the first year after delivery, however, waxing may be beneficial.

Before applying polish or wax the car must be washed and dried. Tar spots can be removed with kerosene or tar remover. Difficult spots may require a fine rubbing compound.

After polishing use liquid or paste wax.

Several commercially-available products contain both polish and wax. Waxing alone does not substitute for polishing of a dull surface.

A wide range of polymer-based car waxes can be purchased today.

The waxes are easy to use and produce a long-lasting, high-gloss finish that protects the bodywork against oxidation, road dirt and fading.

Chromed parts

Chromium-plated and anodized parts should be washed with clean water as soon as they become dirty.

This is particularly important if you drive on gravel roads or on roads where salt is used during the winter. After the car has been washed, apply wax or an anti-rust preparation.

Stains on chrome trim can be removed with commercially-available chrome cleaner. Do not use abrasive compounds or steel wool.



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Volvo service

pg. 99 Volvo Service

Service - an investment!

An investment which will pay dividends in the form of improved reliability, durability, and resale value.

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[pg. 104](#) Engine compartment

[pg. 106](#) Engine oil

[pg. 108](#) Exhaust Emission Service

[pg. 114](#) Rear axle oil

[pg. 115](#) Transmission fluid

[pg. 116](#) Power steering fluid, brake fluid

[pg. 117](#) Lubrication, body

[pg. 118](#) Coolant

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pg. 101 Maintenance service

MAINTENANCE

Maintenance services

Your Volvo has passed two major inspections before being delivered to you, according to Volvo specifications. After being driven 600 - 1,200 miles (1,000 - 2,000 km), your car should be brought to the Volvo dealer for a service inspection. Engine, manual transmission and the rear axle oils will be

changed at this time.

Following this inspection, the maintenance services outlined in this book should be performed every 5,000 miles (8,000 km).

The extended maintenance inspection intervals make it even more advisable to follow this program. Inspection and service should also be performed any time a malfunction is observable or suspected. It is recommended that receipts for vehicle emission services be retained in the event that questions arise concerning maintenance. See your "Maintenance Records Manual".

Maintenance inspection at 5,000 mile (8,000 km) intervals

Volvo advises you to follow the service program at 5,000 mile (8,000 km) intervals which is outlined in the "Maintenance Records Manual". This maintenance program contains inspections and services necessary for the proper function of your car over the next 5,000 miles (8,000 km).

The maintenance services contain several checks which require special instruments and tools and therefore must be performed by a qualified technician.

To keep your Volvo in top condition, specify time tested and proven Genuine Volvo Parts and Accessories.

The Federal Clean Air Act (USA)

The Clean Air Act requires vehicle manufacturers to furnish written instructions to the ultimate purchaser to assure the proper functioning of those components that control emissions.

The maintenance instructions listed in the "Servicing" section of this Manual represent the minimum maintenance required. These services are not covered by the warranty. You will be required to pay for labor and material used. Refer to your Warranty booklet for further details.

In accordance with Federal Regulations, your Volvo is warranted to meet certain Emission Performance Standards. Refer to your Warranty booklet for detailed information,

- Emissions performance warranty (USA)
- Limited 5-year/50,000-mile Emission System Warranty (USA)
- 5-year/80,000-kilometer Emission System Warranty (Canada)

pg. 102 Servicing

Maintenance schedule

A = Adjust (Correct if necessary) I = Inspect (Correct or Replace if necessary)

R = Replace L = Lubricate

Maintenance Operation thousand miles (thousand km)	0.6-1.2 (1.0- 2.0)	5 (8)	10 (16)	15 (25)	20 (32)	25 (40)	30 (48)	35 (56)	40 (64)	45 (72)	50 (80)	55 (88)	60 (96)
EMISSIONS SYSTEM MAINTENANCE													
Engine oil and Oil filter	R	R	R	R	R	R	R	R	R	R	R	R	R
Cooling system hoses and connections	I												
Engine drive belts	A						I						I
Torque manifold nuts	A												
Valve clearance							I						I
Vacuum fittings, hoses and connections	I												
Air cleaner filter							R						R
Spark plugs							R						R
Fuel system cap, tank, lines and connections	I												
Torque exhaust system mounting bolts	A												

Catalytic Converter mounting bolts	A												
Automatic transmission fluid	I	I	I	I	R	I	I	I	R	I	I	I	R
Rear axle oil	R	I	I	I	I	I	I	I	I	I	I	I	I
Timing belt (760 Turbo only)	A										R		
Exhaust system	I		I		I		I		I		I		I

- 1) See section "Engine oil" for detailed information.
- 2) For services beyond 60,000 miles (96,000 km), consult your "Maintenance records manual" and "Maintenance Service Chart".
- 3) Recommended, but not mandatory to maintain Volvo emission warranty.
- 4) Not B 280 F/B 230 FT with EGR

pg. 103 Servicing (cont.)

Maintenance Operation thousand miles (thousand km)	0.6-1.2 (1.0-2.0)	5 (8)	10 (16)	15 (24)	20 (32)	25 (40)	30 (48)	35 (56)	40 (64)	45 (72)	50 (80)	55 (88)	60 (96)
MISCELLANEOUS MAINTENANCE													
ENGINE													
Engine coolant	I	I	I	I	I	I	R	I	I	I	I	I	R
Fuel (Line) Filter						R							

PCV Nipple (Orifice)/hoses						I								
Battery charge	I	I	I	I	I	I	I	I	I	I	I	I	I	I
EGR valve, clean						I								
BRAKES														
Inspect Brakes, Replace components as necessary			I		I		I		I		I		I	
Change brake fluid						R					R			
STEERING														
Tire wear (Align front end if needed.)			I		I		I		I		I		I	
Check power steering fluid level.	I	I	I	I	I	I	I	I	I	I	I	I	I	I
BODY														
Trunk, hood hinges and latches			L		L		L		L		L		L	

1) For detailed information, see "Brake fluid" section.

The following items should be checked weekly by the driver (it takes only a few minutes):

- Engine oil level
- Brake fluid level
- Radiator coolant level
- Tire pressure (all five tires)

Operation of all lights

Horns

Windshield wipers

Level of windshield washer fluid

The following should also be carried out at regular intervals:

Washing

Polishing

Cleaning

Rust protection

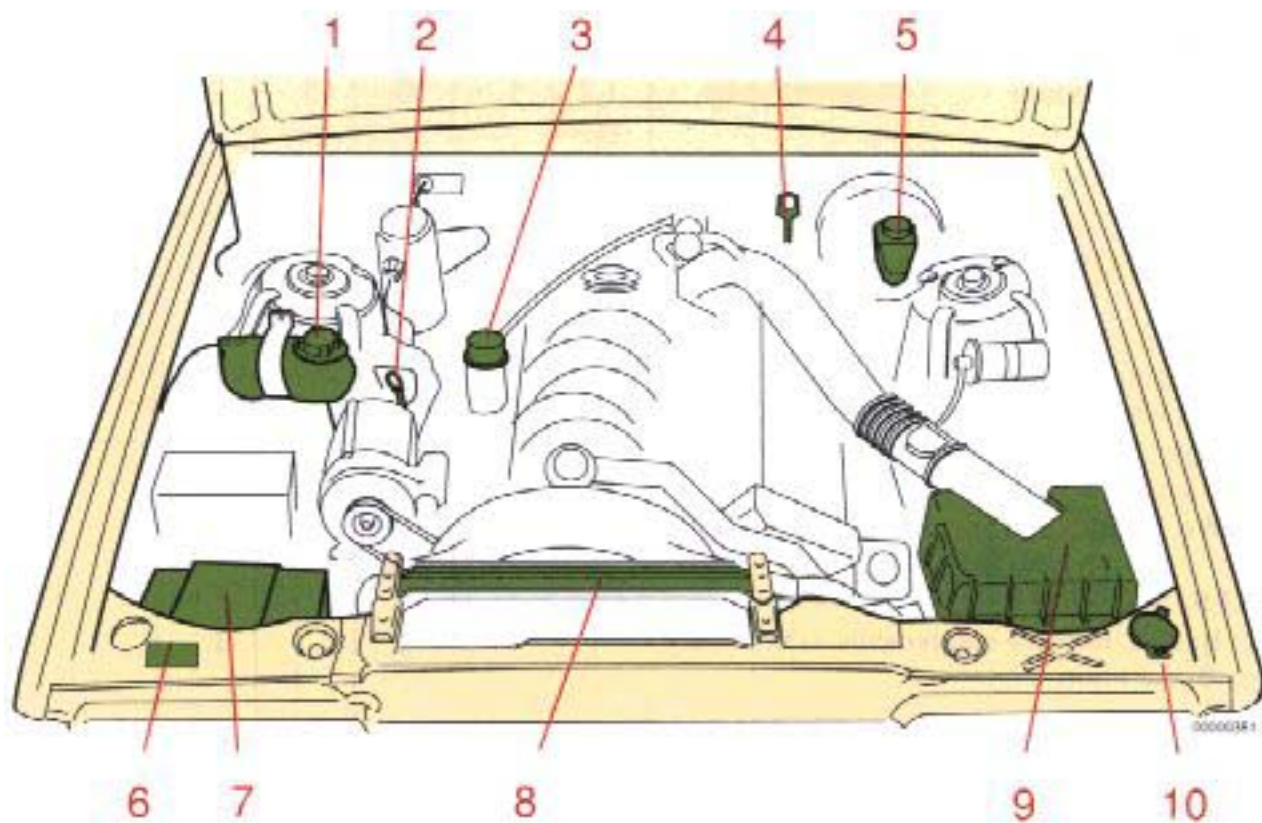


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pg. 104 Engine compartment

Engine compartment
760 GLE (engine B280F)

- 1 Expansion tank, coolant
- 2 Engine oil dip-stick
- 3 Oil filler cap, engine
- 4 Automatic transmission dip-stick
- 5 Brake fluid reservoir
- 6 Data plate
- 7 Battery
- 8 Radiator
- 9 Air cleaner
- 10 Washer fluid reservoir



When filling gas always check:

Fuel: Recommended 95 RON (unleaded), 91 (R+M)/2. Minimum octane requirement 91 RON (unleaded) 87 (R+M/2).

Canada: Unleaded regular

Check, without removing the cap, that the brake fluid level is above the MIN-mark. Brake fluid DOT 4.

Coolant level should be between the expansion tank marks. Mixture 50 percent anti-freeze and 50 percent water.

Oil level should be between the dipstick marks. The distance between the marks represents approx. 1 US qt.=1 liter. When necessary, add oil of the same type as already used.

Washer fluid reservoir should be filled with water and solvent (wintertime: windshield washer anti-freeze).

Changing: a wheel, see chapter "In case of emergency"
a bulb, see section "Bulbs"
a fuse, see section "Fuses"

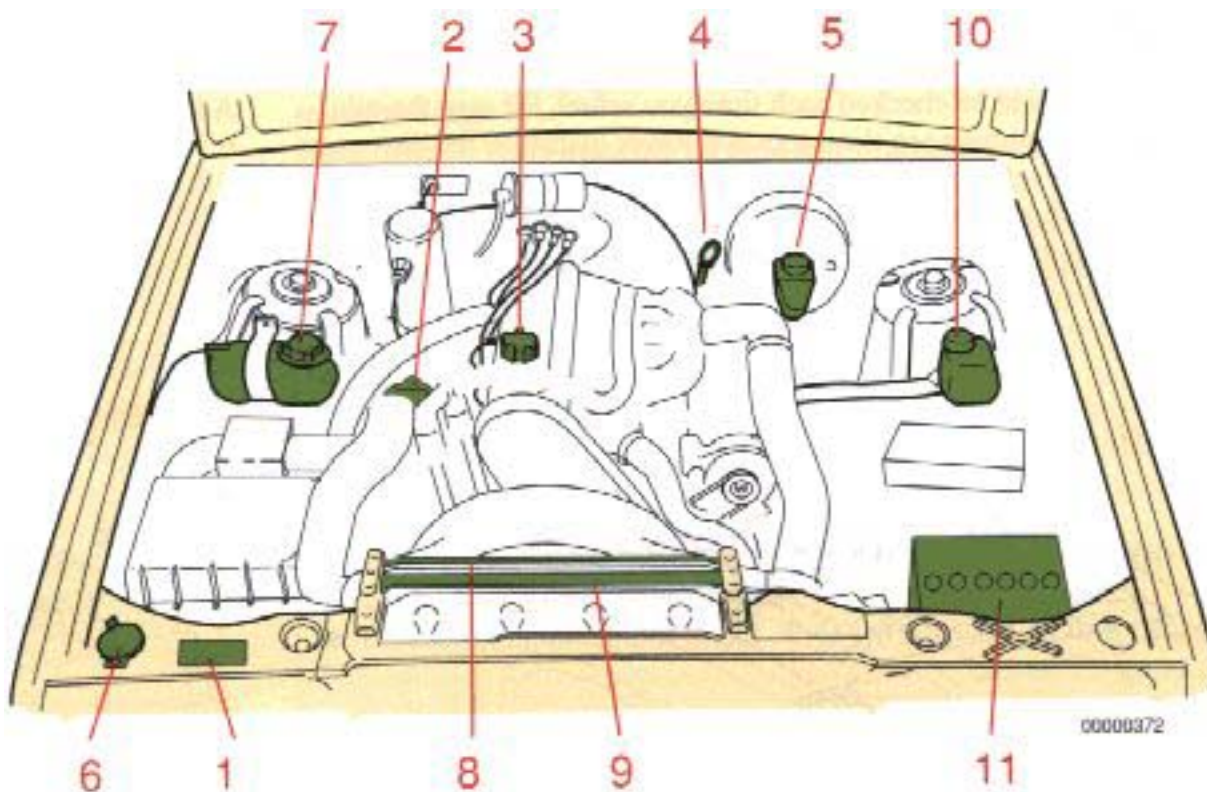
Important! Change engine oil and oil filter at 5,000 mile (8,000 km) intervals. See section "Checking engine oil".

pg. 105 Engine compartment (cont.)

Engine compartment
760 Turbo (engine B230F-Turbo)

- 1 Data plate
- 2 Turbocharger
- 3 Oil filler cap, engine
- 4 Engine oil dip-stick
- 5 Brake fluid reservoir
- 6 Washer fluid reservoir
- 7 Expansion tank, coolant

- 8 Radiator
- 9 Intercooler
- 10 Power steering fluid reservoir
- 11 Battery



When filling gas always check:

Fuel: Recommended 95 RON (unleaded) 91(R+M)/2.

Canada: Unleaded regular

Check, without removing the cap, that the brake fluid level is above the MIN-mark. Brake fluid DOT 4.

Coolant level should be between the expansion tank marks. Mixture 50 percent anti-freeze and 50 percent water.

Oil level should be between the dipstick marks. The distance between the marks represents approx. 1 US qt.=1 liter. When necessary, add oil of the same type as already used.

Washer fluid reservoir should be filled with water and solvent (wintertime: windshield washer anti-freeze).

Changing: a wheel, see chapter "In case of emergency"

a bulb, see section "Bulbs"

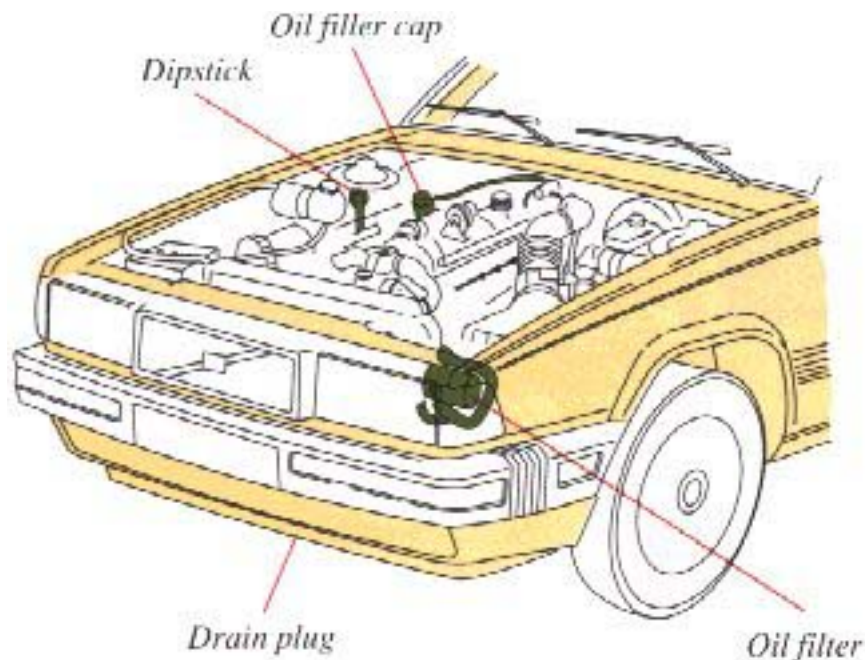
a fuse, see section "Fuses"

Important! Change engine oil and oil filter at 5,000 mile (8,000 km) intervals. See section "Checking engine oil".

pg. 106 Engine oil

Checking the oil level

The oil level should be checked each time you refuel. Be sure the oil level is maintained between the upper and lower marks on the dip-stick. Low oil level can cause internal damage to the engine and over-filling can result in high oil consumption. The distance between the dipstick marks represents approx. 1 US qt (1 liter) of oil.



Draining the oil

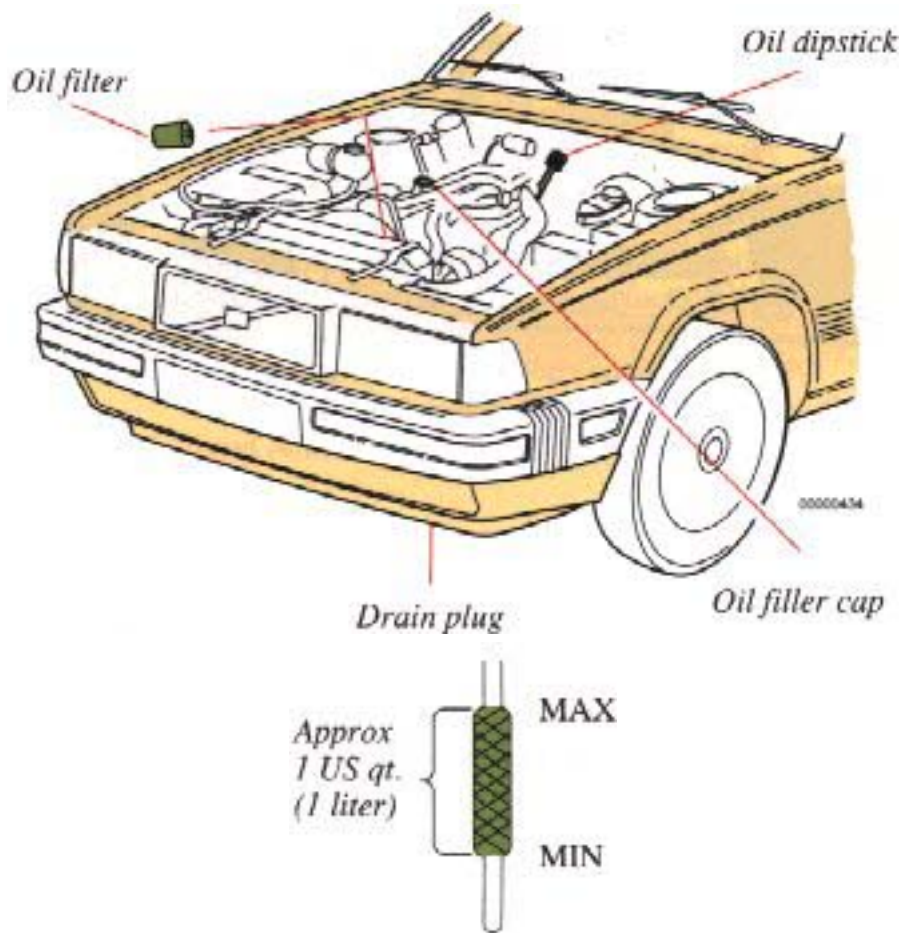
Drain the oil after driving while it is still hot.

Warning!
The oil may be very hot.

To add or change engine oil

Add oil of the same kind as already used. Capacity (including filter): 6.3 US qts = 6 liters (760 GLE); 4.0 US qts = 3.85 liters (760 Turbo)*.

* if oil cooler (Turbo models) is drained, add 0.7 US qts (0.6 liters).



Changing oil filter

Replace the oil filter at every oil change.

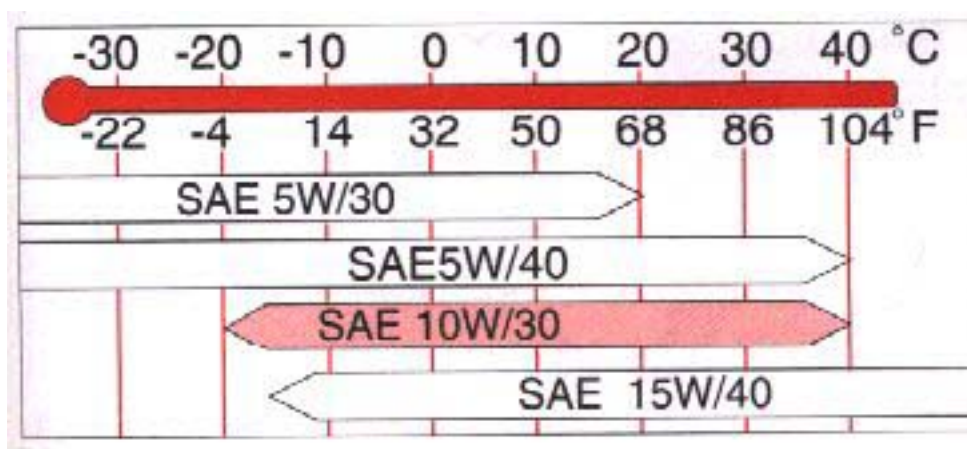
pg. 107 Engine oil

Oil quality

API SG or alternatively API SF

*Oils with designation SG/CD and SF/CD comply with these requirements.

Viscosity (stable ambient temperatures):



Volvo recommends the use of energy-conserving oils. Look for the API label.

Synthetic or semisynthetic oils may be used if their specifications comply with the oil quality requirements.

Volvo does not recommend additional oil additives, as they can adversely affect the engine.

Changing oil and oil filter

Oil and oil filter are first changed at the 600-1,200 mile (1,000-2,000 km) service. Thereafter, changes

should be made as specified by this table:

SAE 15W/40 is recommended for use in driving conditions that raise oil temperature and increase oil consumption (i.e., mountain driving; trailer towing).

NOTE: SAE 15W/40 must not be used at low ambient temperatures; see viscosity chart.

If driving conditions include:	Then the correct oil/oil filter change interval is:
- Extended periods of idling and/or low-speed operation - Frequent short trips (less than 7 miles = 11 km) - Extended periods of driving in dusty and/or sandy areas - Trailer towing - Driving in mountainous areas	EVERY 5,000 miles= 8,000 km OR EVERY 3 MONTHS, WHICHEVER COMES FIRST
- Primarily highway driving - Frequent trips of longer than 7 miles = 11 km - Normal driving	EVERY 5,000 miles=8,000 KM* OR EVERY 6 MONTHS WHICHEVER COMES FIRST



Volvo recommends the use of oils with the American Petroleum Institute (API) label, This label certifies that the oil conforms to the applicable standards and specifications of the API.



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Torque exhaust manifold nuts

The manifold nuts should be torqued at the 600-1200 mile (1000-2000 km) inspection. A loose manifold could alter air/fuel ratio and cause an increase in emissions and/or poor driveability.

Valves

The valve clearance should be check and, if necessary, adjusted every 30,000 miles (48,000 km).

Air cleaner

Replace the air cleaner cartridge with a new one every 30,000 miles (48,000 km). The cartridge should be replaced more often when driving under dirty and dusty conditions, The filter cannot be cleaned and, therefore, should always be replaced with a new one.

Vacuum fittings, hoses and connections

Unstable idle, misfiring, or poor emission control is often caused by leaking vacuum hoses or connections. Check hoses and connections on distributor vacuum unit, connections on heater control servo systems and hydraulic brake servo.

Checking and adjusting idle speed

Your Volvo is equipped with an electronically-controlled idle speed system that requires no checking or adjustment.

Fuel system cap, tank and lines, and connections

The effectiveness of the fuel system to contain hydrocarbons is dependent largely on a leakfree system.

Check for proper sealing of gasoline filler cap which contains "O" ring-type seals. Check all evaporative hoses in vehicle for tightness. Check fuel lines under vehicle and repair if necessary.

Fuel (line) filter

The fuel line filter is located next to the fuel pump. This filter should be replaced every 60,000 miles (96,000 km). The filter is replaced as one complete unit.

Replace more frequently if contaminated fuel is introduced into the tank (or if there is reason to suspect that this has occurred).

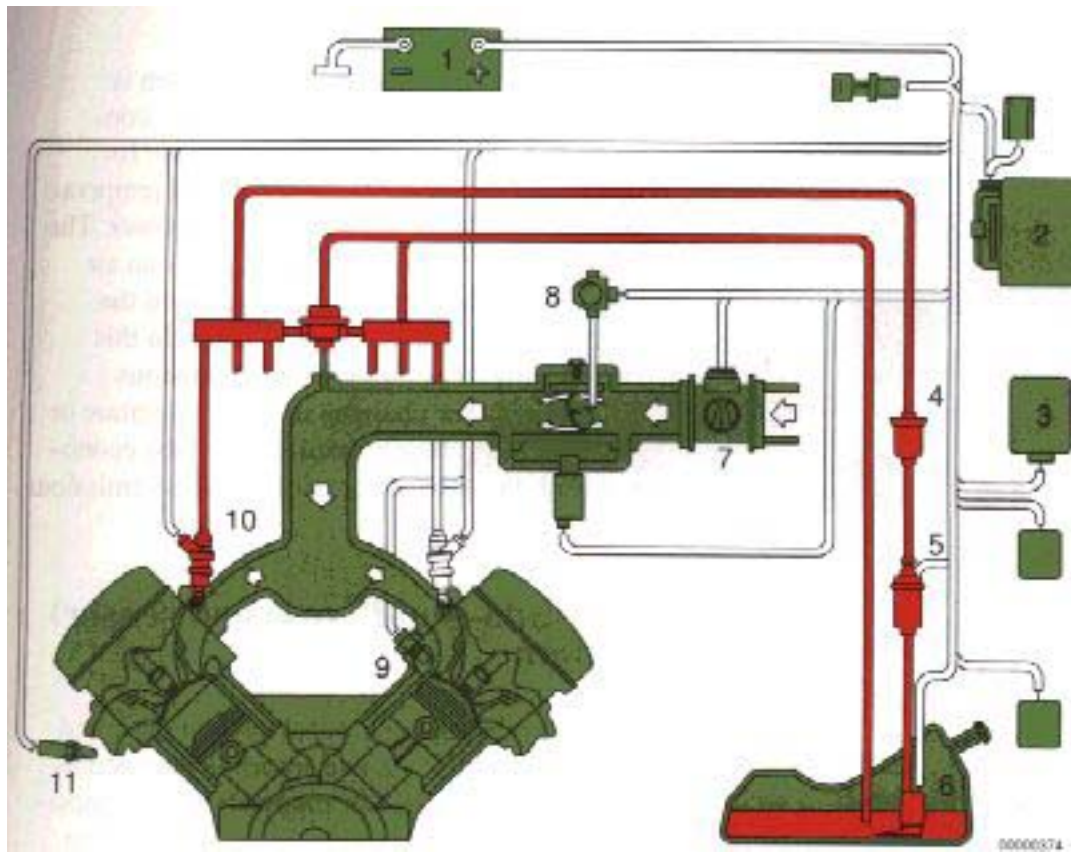
Timing Belt (Turbo Model only)

The timing belt should be adjusted at the 600-1,200 mile (1000-2000 km) inspection. We recommend that the timing gear belt be replaced every 50,000 miles (80,000 km).

Exhaust Gas Recirculation (EGR)

This system operates by returning some of the exhaust gases to the engine to be recombusted: since this lowers the combustion temperature the amount of nitrogen oxides released into the atmosphere is reduced.

The EGR valve should be cleaned after 48,000 miles (80,000 km) and then at 24,000 mile (40,000 km) intervals.



- 1 Battery
- 2 Injection control unit
- 3 Ignition control unit
- 4 Fuel filter
- 5 Fuel pump
- 6 Fuel feed pump
- 7 Air mass meter
- 8 Throttle switch
- 9 Temperature sensor
- 10 Injector
- 11 Oxygen sensor

LH-Jetronic fuel system (760 GLE)

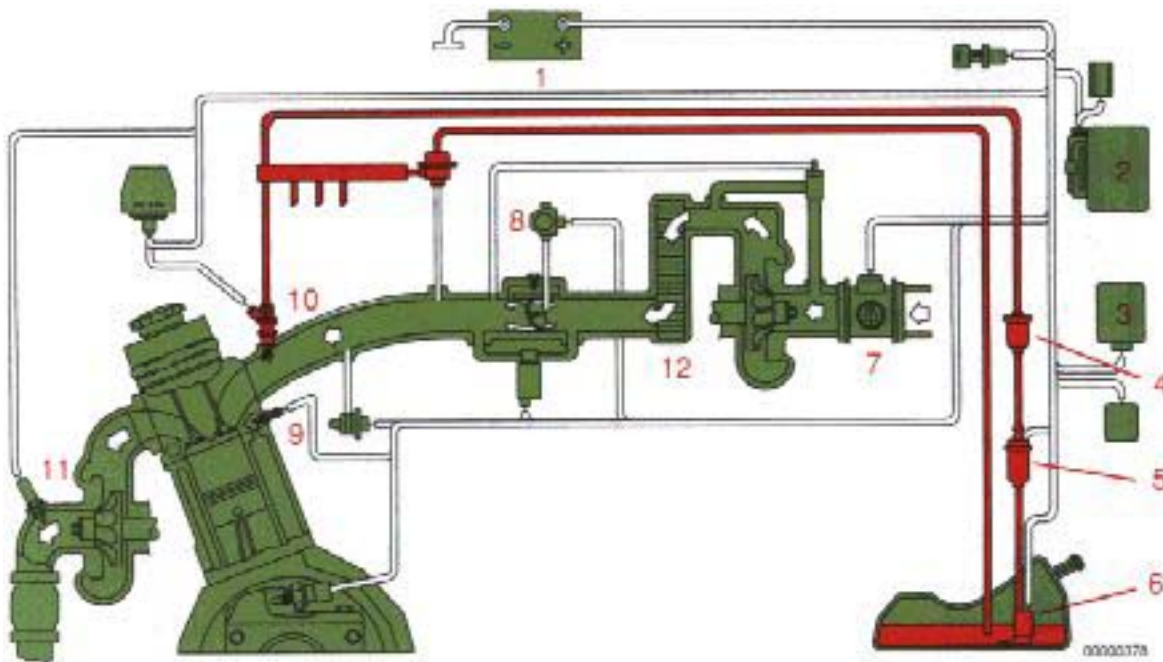
The LH-Jetronic injection system is all-electronic and is microprocessor-controlled. It can continuously compensate for variations in engine load, speed and temperature to give the best economy and power. The most unique feature of the system is an air mass meter that measures the mass of the inducted air instead of the volume. In this way the system can make instantaneous adjustments for changes in air temperature or density, thus always assuring the best economy with the lowest-possible exhaust

emissions.

Lambda-sond™ (oxygen sensor) system

This is an emission control system designed to reduce emissions and improve fuel economy. The heated oxygen sensor monitors the composition of the exhaust gases leaving the engine. The exhaust gas analysis is fed into an electronic control module. This adjusts the air-fuel ratio to provide optimum conditions for combustion and efficient reduction of the three major pollutants (hydrocarbons, carbon monoxide and nitrous gases) by a 3-way catalytic converter.

pg. 110 Servicing (cont.)



- 1 Battery
- 2 Injection control unit
- 3 Ignition control unit
- 4 Fuel filter
- 5 Fuel pump
- 6 Fuel feed pump
- 7 Air mass meter
- 8 Throttle switch
- 9 Temperature sensor
- 10 Injector
- 11 Oxygen sensor

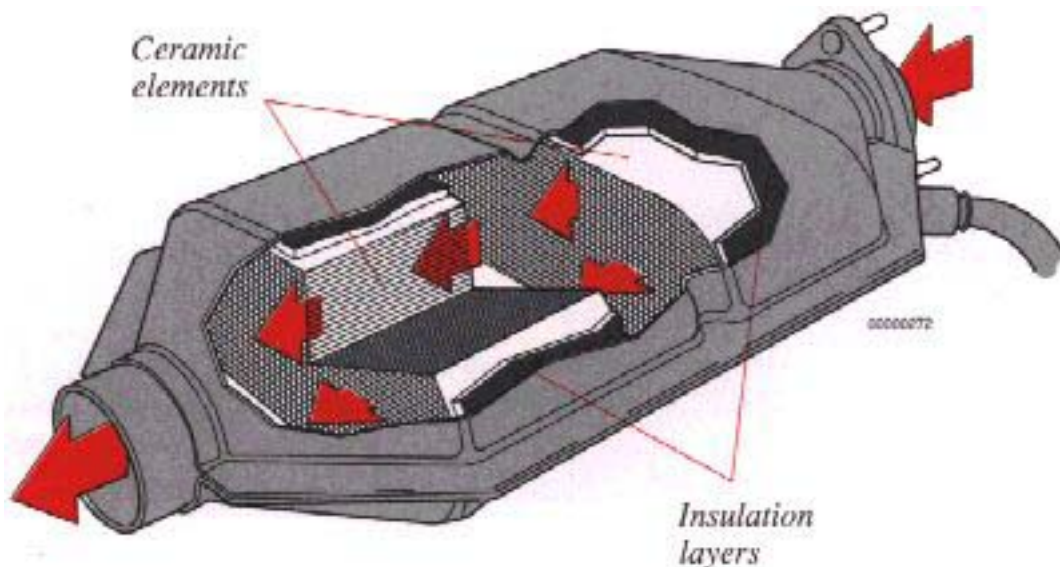
LH-Jetronic fuel system (760 Turbo)

The LH-Jetronic injection system is all-electronic and is microprocessor-controlled. It can continuously compensate for variations in engine load, speed and temperature to give the best economy and power. The most unique feature of the system is an air mass meter that measures the mass of the inducted air instead of the volume. In this way the system can make instantaneous adjustments for changes in air temperature or density, thus always assuring the best economy with the lowest-possible exhaust emissions.

Lambda-sond™ (oxygen sensor) system

This is an emission control system designed to reduce emissions and improve fuel economy. The heated oxygen sensor monitors the composition of the exhaust gases leaving the engine. The exhaust gas analysis is fed into an electronic control module. This adjusts the air-fuel ratio to provide optimum conditions for combustion and efficient reduction of the three major pollutants (hydrocarbons, carbon monoxide and nitrous gases) by a 3-way catalytic converter.

pg. 111 Servicing (cont.)



Catalytic Converter

This is a supplementary device in the exhaust system, designed to clean exhaust gases. This device is mainly a container with a ceramic material insert, designed to let the exhaust gases pass through channels in the insert. The channel walls are covered by a thin layer of platinum-palladium. These metals act as catalysts, permitting a chemical action to occur without actually taking part in it. The emission (CO, HC, NOx) content will increase if the three-way catalytic converter is damaged. Lambda-sond equipped vehicles use Catalytic Converters containing platinum and rhodium.

Torque Catalytic Converter mounting bolts

The Catalytic Converter mounting bolts should be torqued after the first 600-1,200 miles (1,000-2,000 km).

CAUTION:

Vehicles with Catalytic Converter must use unleaded fuel only. Otherwise the Catalytic Converter will become ineffective. See "Fuel requirements".

pg. 112 Servicing (cont.)

WARNING!

The ignition system operates at very high voltages. Special safety precautions must be followed to prevent injury.

Always turn the ignition off when:

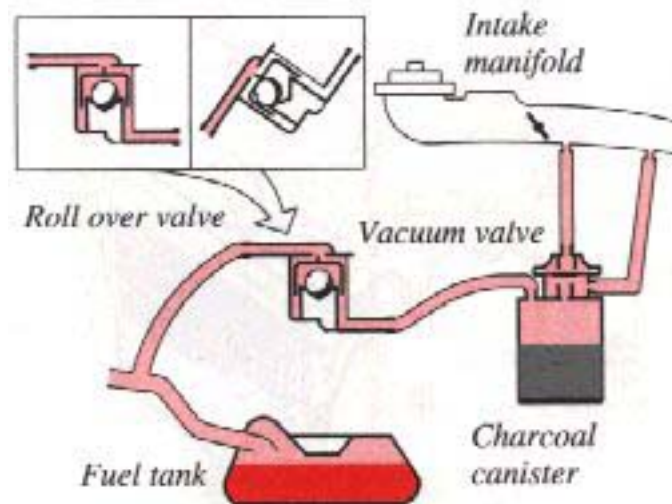
- connecting engine test and diagnostic equipment to the vehicle (timing light, tach-dwell tester, ignition oscilloscope, etc..).
- Replacing distributor ignition components e.g. plugs, coil, distributor, HT leads etc.
- Do not touch any part of the distributor ignition system while the engine is running. This may result in unintended movements and body injury.

Replacing spark plugs

The spark plugs should be changed every 30,000 miles (48,000 km). However, city driving or fast highway driving may necessitate changing after 15,000 miles (24,000 km) of driving. When installing new plugs, be sure to fit the right type and use correct torque, see Specifications. When changing the plugs, check that the suppressor connectors are in good condition. Cracked or damaged connectors should be replaced.

When changing the spark plugs, clean the terminals and the rubber seals. If the car is driven on roads where salt is used during the winter, coat the cables with silicone.

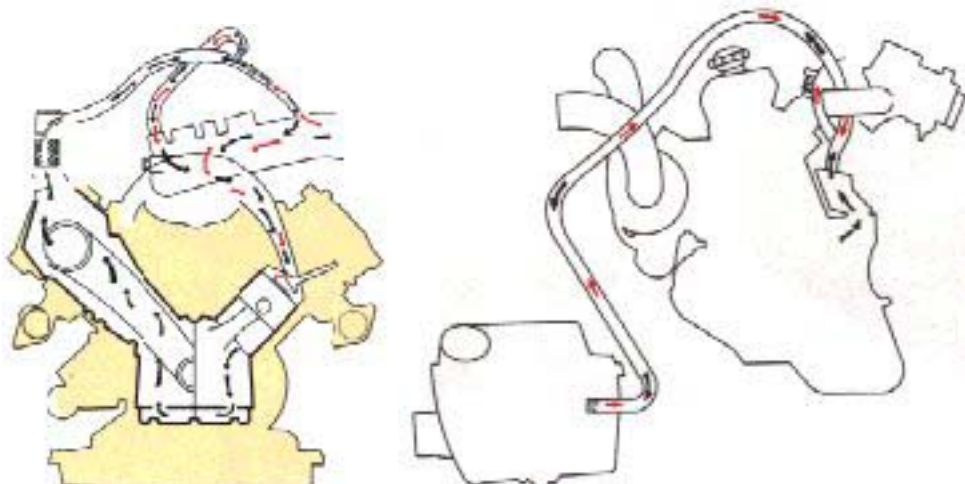
pg. 113 Servicing (cont.)



Evaporative control system

The 760 is equipped with a gas-evaporative control system, which prevents gasoline fumes from being released into the atmosphere. The system is comprised of an expansion chamber in the fuel tank, a roll-over valve on the cross member in front of the fuel tank, and a charcoal canister with built-in vacuum valve under the left-front wheel housing.

The components are interconnected by hoses which channel fuel vapor from the gas tank to the charcoal filter, where it is stored until the engine is started and then drawn into the engine's fuel-induction system.



Crankcase ventilation

The engine is equipped with positive crankcase ventilation which prevents crankcase gases from being released into the atmosphere. Instead, the crankcase gases are admitted to the intake manifold and cylinders.

PCV system, B280F

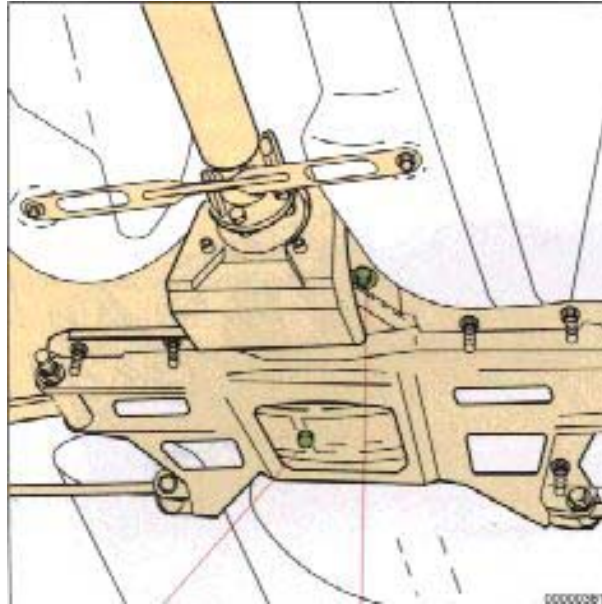
The orifice nipple in the intake manifold should be cleaned every 50,000 miles (80,000 km).
Check/replace rubber hoses at the same time.

PCV system, B230F-Turbo

The orifice nipple in the intake manifold and the filter at the end of the PCV hose in the aircleaner should be cleaned every 50,000 miles (80,000 km).
Check/replace rubber hoses at the same time.



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Drain Plug Fill plug

Rear axle (sedan)

Capacity: 1.7 US qts (1.6 liters)

Oil type: API GL-5 (MIL-L2105 B or C).

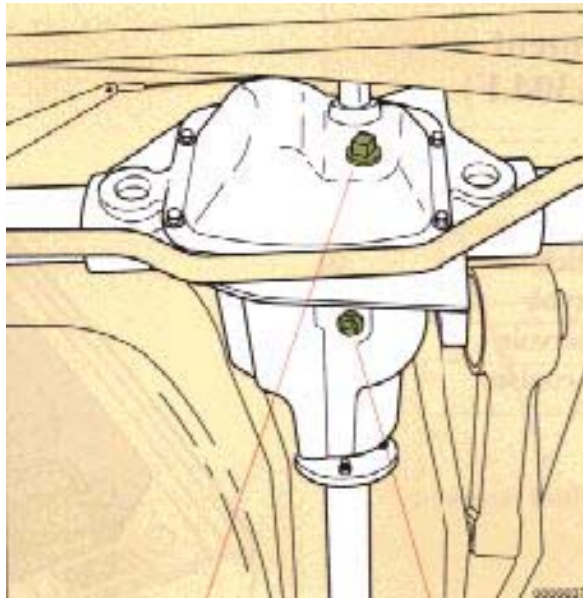
Viscosity: SAE 90 or 80W/90

Replace: at 600-1200 mile (1000-2000 km) service only.

The oil level should be up to the filler plug.

Drain rear axle oil through drain plug.

When the temperature is consistently below 15° F (-10° C), use API GL-5 SAE 80W oil.



Fill plug Drain plug

Rear axle (wagon)

Capacity: 1.7 US qts (1.6 liters)

Oil type: API GL-5 (MIL-L2105 B or C).

Viscosity: SAE 90 or 80W/90

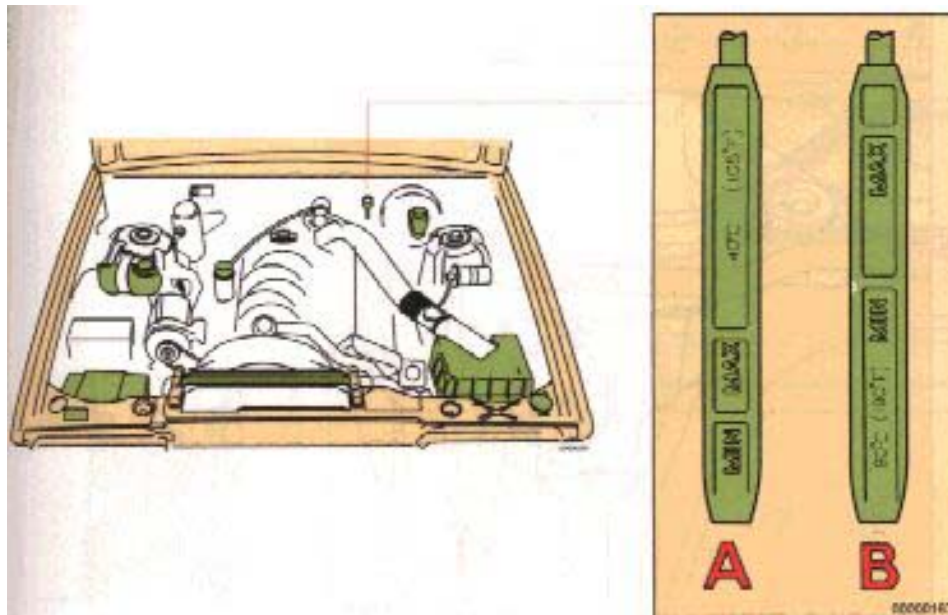
Replace: at 600-1200 mile (1000-2000 km) service only.

The oil level should be up to the filler plug.

Drain rear axle oil through drain plug.

When the temperature is consistently below 15° F (-10° C), use API GL-5 SAE 80W oil.

pg. 115 Automatic transmission



Automatic transmission oil

Capacity: See "Specifications" section

Fluid type: Automatic Transmission Fluid type Dexron IID.

Replace: Every 20,000 miles (32,000 km).

Warning!
Oil spilled on a hot exhaust pipe constitutes a fire risk.

A Cold transmission: oil temperature= + 105°F (+40°C).

This is a normal temperature for the transmission after idling for about 10 minutes.

At oil temperature below + 105°F (+40°C), the level may be below the MIN mark.

B Warm transmission: oil temperature= + 195°F (+90°C).

This temperature is reached after driving for about 30 minutes.

At oil temperature above +195°F (+90°C), the level may be above the MAX mark.

NOTE:
The engine should be idling when checking transmission fluid level.

Check the oil level as follows:

Park the car on level surface with the engine idling.

Slowly move the selector lever through all gear positions and then to position P. Wait 2 minutes before checking the oil level. As the illustration shows, the dipstick has a "Cold" and a "Warm" side. The oil level should be between the MIN and MAX marks. Wipe the dipstick with a clean cloth.

Warning! The oil may be very hot

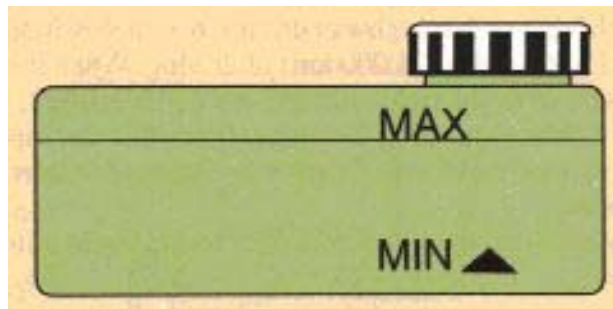
Do not use rags that could leave lint on the dipstick.

The transmission is topped up via the dipstick tube.

The space between the MIN and MAX marks on the dipstick corresponds to 0.5 US qt (0.5 liter). Do not fill the transmission with too much oil, since this can result in oil being ejected from the transmission.

Too little oil, on the other hand, can negatively affect transmission operation, particularly in very cold weather.

pg. 116 Brake fluid, Power steering fluid



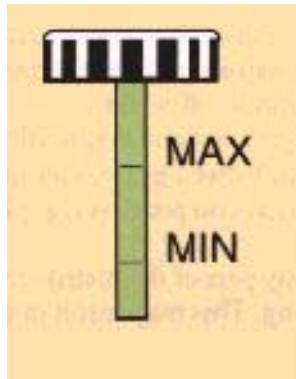
Brake fluid

The fluid level should be between the MIN and MAX marks.

Fluid type: DOT 4

Replace: every second year or 30,000 miles (48,000 km). The brake fluid should be replaced once a year or every 15,000 miles (25,000 km) when driving under extremely severe conditions (mountain driving, hot climate, high humidity etc.)

Check, without removing the cap, that the level is above the "MIN" mark of the fluid reservoir.
Always entrust brake fluid changing to an authorized Volvo dealer.



Power steering fluid

760 GLE

The dipstick has markings for hot and cold fluid.

When cold, the fluid must not be above the COLD mark, and similarly, when hot it must not be above the HOT mark. Top up with Type F transmission fluid only, if the level drops to below the ADD mark.

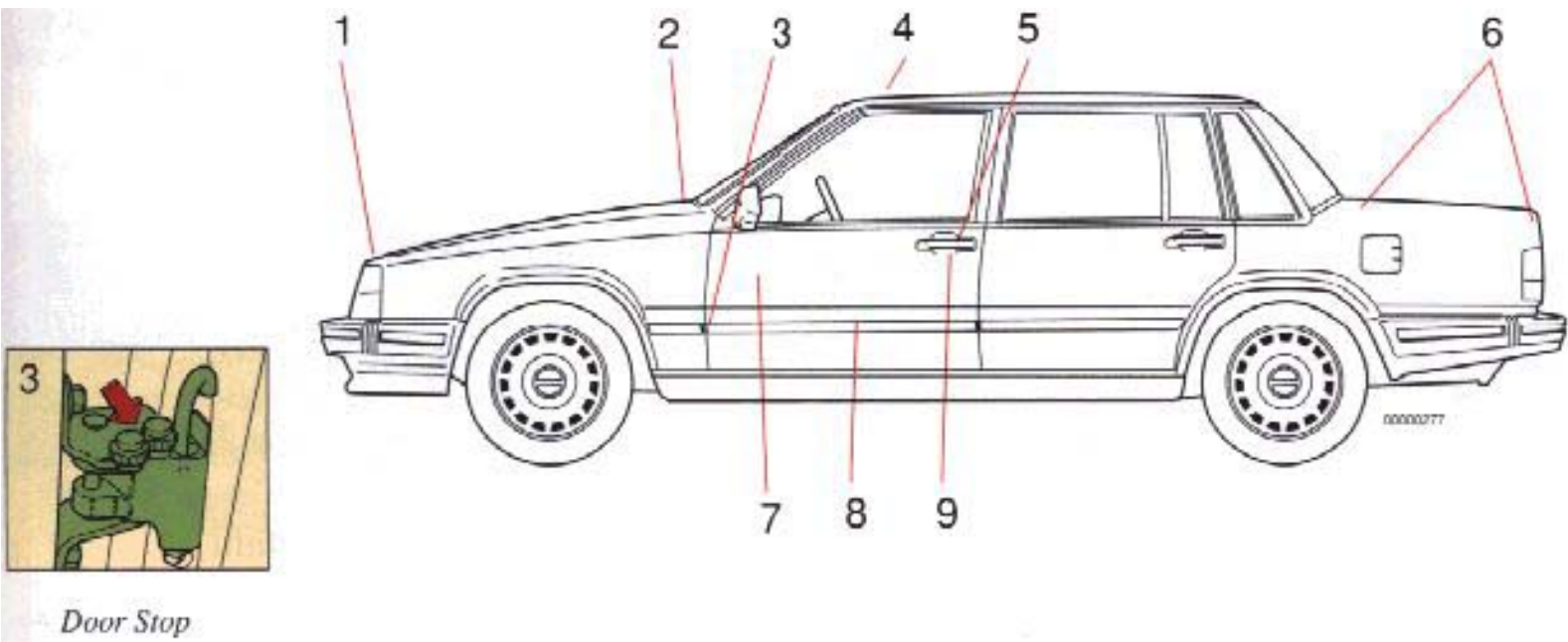
760 Turbo

The fluid level should lie between the MIN and MAX on the side of the dipstick. The space between the marks corresponds to 0.2 US qts/liters.

Fluid type: Type F

Replace: No fluid change required.

pg. 117 Lubrication



No. Lubricating hint Lubricant

1 Hood lock and latch Oil

2 Hood hinges Oil

3 Door stop and hinges Oil

4 Sun roof wind deflector Oil

5 Door lock catch plate Oil

6 Trunk lid lock Low temperature
keyhole grease

7 Window regulator Oil, grease
locking device low temperature
(on inside of door) grease

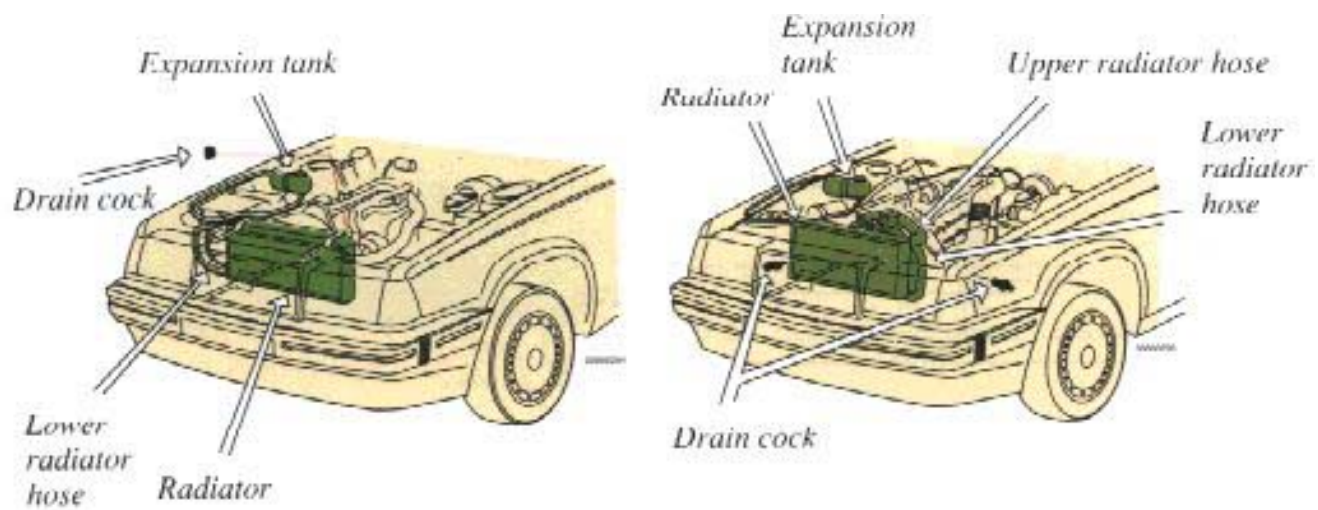
8 Front seat slide rail
and latch Oil

9 Door lock keyhole Low temperature grease
or Volvo Teflon lock oil.

To avoid rattles and unnecessary wear, the body should be lubricated a few times per year.

pg. 118 Cooling system

760 Turbo 760 GLE



Check coolant level

The cooling system must be filled with coolant and not leak to operate at maximum efficiency. Check the coolant level regularly. The level should be between the "Max" and "Min" marks on the expansion tank. The check should be made with particular thoroughness when the engine is new or when the cooling system has been drained.

Do not remove the filler cap other than for topping-up with coolant. Frequent removal may prevent coolant circulations between the engine tank during engine warm-up and cooling.

Changing coolant

Every two years or 30,000 miles (50,000 km) the cooling system should be drained, flushed and refilled. Remove the expansion tank cap. Open the drain cocks on the right side of the engine block and disconnect the lower radiator hose.

Fill coolant through the expansion tank. The heater controls should be fully open when draining and filling. Add coolant until the level is up to the MAX mark or slightly above.

Start the engine and run until hot. Check the cooling system connections for tightness. Also re-check the coolant level.

Capacity: See "Specifications"

Coolant: Volvo coolant type C (blue green)

CAUTION!

The cooling system must always be kept filled to correct level.

If it is not kept filled, there can be high local temperatures in the engine which could result in damage.

Top up with coolant

Top up with coolant by filling the expansion tank when level is at the "MIN" mark. Use a mixture of 50 percent anti-freeze/summer coolant and 50 percent water all the year round.

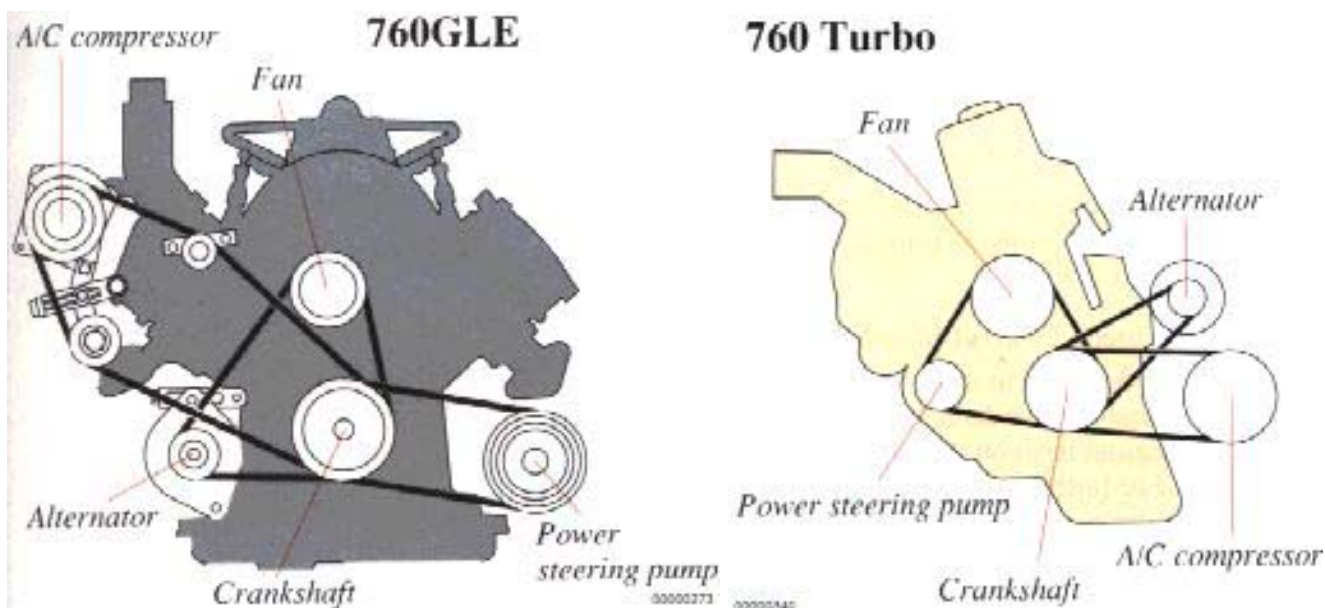
Top up to the "MAX" mark.

WARNING:

If the engine is warm and you are going to top up coolant, unscrew the cap slowly in order to allow any excess pressure to escape.

NOTE: Do not top up with water only. Water by itself reduces the rust-protective and anti-freeze qualities of the coolant and has a lower boiling point. It can also cause damage to the cooling system if it should freeze.

pg. 119 Drive belts



Checking the belt tension

The belt tension can be checked by depressing the fan belt (engine not running!) at a point midway between the generator and fan. It should be possible to press down the belt about .0394-.1181" (1-3 mm). This also applies to other drive belts on the engine.

Belt check

Check the belt regularly to make sure it is in good condition and is clean. Worn or dirty belts can cause poor cooling and low generator output as well as impair the operation of the power steering and the air conditioning unit.

Belt adjustment and replacement

The belts can be difficult to reach and it is advisable to let your Volvo dealer adjust the tension of the belts or replace them, if necessary.

pg. 120 Label information

The Vehicle Identification Number (VIN) should always be quoted in all correspondence concerning your vehicle with the dealer and when ordering parts.

1 Vehicle Identification Number (VIN) *

VIN plate is located on top left surface of dashboard. The VIN is also stamped on the right hand door pillar.

2 Vehicle Emission Control Information

Your Volvo is designed to meet all applicable emissions standards, as evidenced by the certification label on the left wheelhousing. For further information regarding these regulations, please consult your Volvo dealer.

3 Model Plate

Vehicle Identification Number (VIN). Codes for color and upholstery etc. This plate is located on panel above right headlight.

4 Loads and Tire Pressures

5 Federal Motor Vehicle Safety Standards (FMVSS) specifications (USA) and Ministry of Transport (CMVSS) Standards (Canada)

This label is located on rear-facing side of the driver's door.



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Specifications

pg. 121 Specifications

Specifications

Dimensions and weights 760 GLE 760 Turbo

Length 188.4 in (478.5cm)

Width 69.3 in (176 cm)

Height, Sedan 55.5 in (141 cm)

Wagon 56.7 in (144 cm)

Wheelbase 109 in (277 cm)

Track, front 57.8 in (147 cm)

Sedan rear 59.8 in (152 cm)

Wagon rear 57.5 in (146 cm)

Turning circle, between curbs 32.5 ft (9.9 m)

Trunk capacity (sedans) 17.2 cu. ft. (0.49 m

Cargo capacity (wagons)

With rear seats up 39.3 cu. ft. (1.1 m

With rear seats down 74.9 cu. ft. (2.1 m

Curb weight (Sedan) 3303-3314 lbs (1499-1505 kg)

Curb weight (Wagon) 3263-3265 lbs (1480 kg)

Gross vehicle weight (sedan) 4275 lbs (1940 kg)

Gross vehicle weight (wagon) 4295 lbs (1950 kg)

Capacity weight: (sedan)* 925 lbs (420 kg)

Capacity weight: (wagon)* 1035 lbs (470 kg)

Permissible axle weight, front (Turbo) 2070 lbs (940 kg)

front (GLE) 2090 lbs (950 kg)

rear (sedan) 2225 lbs (1010 kg)

rear (wagon) 2335 lbs (1060 kg)

Max. roof load 220 lbs (100 kg)

Max. trailer weight 3300 lbs (1500 kg)

See also section "Trailer hauling"

*The max permissible axle loads must not be exceeded!

Consult your Volvo dealer for information.

All specifications are subject to change without notice.

WARNING!

When adding accessories, equipment, luggage and other cargo to your vehicle, the total weight capacity of the vehicle must not be exceeded.

pg. 122 Oil/Fluids Specifications

Engine oil

Quality: According to API SG or alternatively SF

Oil with designation SG/CD and SF/CD comply with these demands.

Synthetic or semi-synthetic oils may be used if their specifications comply with the above.

Volvo recommends the use of fuel economy improving oils. Look for the API label.

Volvo does not recommend oil additives as they can adversely affect the engine.

Capacity (including oil filter):

760 GLE: 6.3 US qts (6.0 liters)

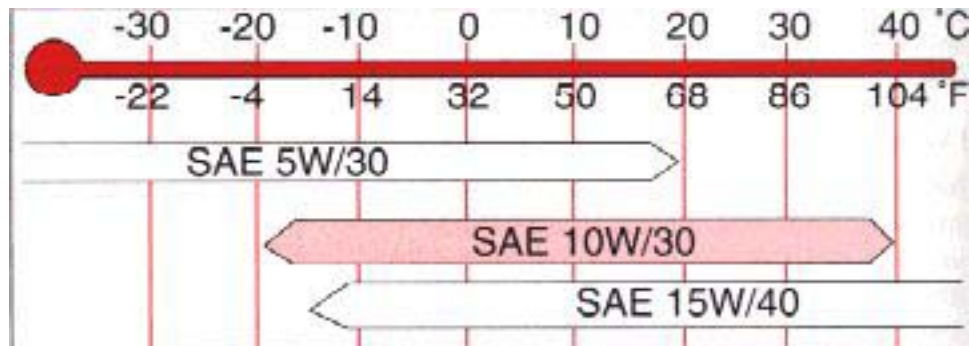
760 Turbo: 4.0 US qts. (3.85 liters)

4.7 US qts. (4.45 liters) if oil cooler is drained.

SAE 15 W/40 oil is recommended for use in severe driving conditions which involve high oil temperatures or excessive oil consumption (e.g. mountain driving with frequent deceleration, or high-speed driving.)

Automatic transmission	Quality : ATF Dexron IID	Capacity : 7.9 US qts. (7.5 liters)
Rear axle	Quality : API-GL-5 (MIL-L-2105 B or C) SAE 90	Capacity : 1.7 US qts (1.6 liters)

Power steering	Quality : Type F	Capacity : 760 Turbo: 1.05 Us qts (1.0 liters) 760 GLE: 0.7 US qts (0.7 liter)
Brake fluid	Brake fluid type : DOT 4	Capacity : 0.63 US qts. (0.6 liters)



pg. 123 Specifications (cont.)

Engine (760 GLE)

Liquid-cooled, gasoline, 6-cylinder V-engine with 90° angle. Aluminum cylinder block with cast-iron, replaceable wet liners. Aluminum-alloy cylinder head has separate inlet and exhaust passages. Single, overhead camshafts.

Engine lubrication is provided by a gear pump driven from camshaft. Full-flow type oil filter. Exhaust emission control accomplished by fuel injection, Lambda-sond system and catalytic converter. Closed crankcase ventilation system and evaporative emission control system.

Type designation Volvo B 234 F

Output(SAE J 1349) 145 hp at 5100 rpm (108 kW at 85 rps)

Max. torque(SAE J 1349) 173 ft. lbs. (235 Nm) at 3750 rpm

Number of cylinders 6

Bore 3.58" (91 mm)

Stroke 2.87" (73 mm)

Displacement 2.85 liters

Compression ratio 9.5:1

Valve clearance, cold engine
inlet 0.004-0.006"
(0.10-0.15 mm)
exhaust 0.010-0.012"
(0.25-0.30 mm)

All specifications are subject to change without notice.

Engine (760 Turbo)

Liquid-cooled, gasoline, 4-cylinder in-line engine. Cast-iron cylinder block with cylinders bored directly in block. Aluminum-alloy cylinder head with single overhead camshaft and separate intake and outlet channels.

Engine lubrication is provided by a gear pump driven from the crankshaft. Full-flow type oil filter. Exhaust emission control accomplished by fuel injection, Lambda-sond system and catalytic converter. Exhaust-gas-driven turbo-compressor with intercooler

Type designation Volvo B230F-Turbo

Output(SAE J 1349) 162 hp at 4800 rpm (120 kW at 86 rps)
Max. torque(SAE J 1349) at rpm 195 ft. lbs. (265 Nm) at 2900 rpm
Number of cylinders 4
Bore 3.78" (96 mm)
Stroke 3.15" (80 mm)
Displacement 2.32 liters
Compression ratio 8.7:1
Valve clearance, cold engine Checking Adjusting
inlet 0.012-0.016" 0.014-0.016"
(0.30-0.40 mm) (.35-0.40 mm)
exhaust 0.012-0.016" 0.014-0.016"
(0.30-0.40 mm) (0.35-0.40 mm)

All specifications are subject to change without notice.

760 GLE (Engine B280F)

Cooling system

Type Positive pressure, Closed system

Thermostat: begins to open at 189° F (87° C)

Coolant: Volvo coolant type C (blue-green)

Capacity: 10.6 US qts (10 liters)

Fuel system

The engine is equipped with an electronic fuel injection system (type LH-Jetronic).

Ignition System

Firing order 1-6-3-5-2-4

Ignition setting:

(cannot be adjusted) 16° +/- 2° B.T.D.C.

(at 750 rpm)

Spark plugs Bosch HR 6 DC (or equivalent)

Spark plug gap 0.024-0.028" (0.6-0.7 mm)

Tightening torque 9+/- 1.5 ft. lbs. (12 +/- 2 Nm)

Distributor, direction of rotation Clockwise

760 Turbo (Engine B230F-Turbo)

Cooling system

Type Positive pressure, Closed system

Thermostat: begins to open at 197° F (92° C)

Coolant: Volvo coolant type C (blue-green)

Capacity: 10 US qts (9.5 liters)

Fuel system

The engine is equipped with an electronic fuel injection system (type LH-Jetronic).

Ignition System

Firing order 1-3-4-2

Ignition setting: 12° B.T.D.C. (at 700-800 rpm)

Spark plugs Bosch WR 6 DC (or equivalent)

Spark plug gap 0.028-0.032" (0.7-0.8 mm)

Tightening torque 15-22 ft. lbs. (20-30 Nm)

Distributor, direction of rotation Clockwise

pg. 125 Specifications (cont.)

POWER TRANSMISSION

Automatic transmission AW 71

Reduction ratios:

1st gear 2.45:1

2nd gear 1.45:1

3rd gear 1:1

Overdrive 0.69:1

Reverse 2.21:1

Rear axle

Reduction ratios: 3.73:1

All specifications are subject to change without notice.

Front suspension

McPherson-type spring and strut suspension. Shock absorbers housed in strut casing. Rack-and-pinion steering.

Safety-type steering column.

The alignment specifications apply to an unloaded car, but include fuel, coolant, and spare wheel.

Toe-in, measured on the wheel rim: $3/32'' \pm 1/64''$ (2.5 mm $\pm$ 0.5 mm)

tire sides: $1/8'' \pm 1/32''$ (3 $\pm$ 0.8 mm)

Rear Suspension

Sedans: Multi-link rear wheel suspension consisting of four elements per side: a trailing support arm with coil spring and load leveling shock absorber, an upper L-shaped link, a lower transverse link, and an angled rear track rod to control wheel toe-in.

Toe-in, measured at the wheel rim: $0.016'' \pm 0.020''$ (0.4 $\pm$ 0.5 mm)

tire sides: $0.02'' \pm 0.031''$ (0.5 $\pm$ 0.8 mm)

Wagons: Constant track rear axle located by two trailing support arms and a track rod. Equipped with coil spring and load-leveling shock absorbers. Torque forces controlled by two separate torque rods connected to rubber-insulated subframe.

pg. 126 Specifications (cont.)

ELECTRICAL SYSTEM

12 V, negative ground.

Voltage-controlled alternator. Single-wire system with chassis and engine used as conductors.

Voltage 12 V

Battery, type Maintenance free

Capacity 450 A/90 min

500 A/115 min.

Alternator, rated output 1400 W
max. current 100 Amp

Bulb	Trade No.	Power	Socket	No. of bulbs
Headlights	HB1/9004	65/45 W	-	2
Parking lights				
turn signals, front	1157 N. A.	21/5 W/24/2.2 cp	BAY 15	2
turn signals, rear	1156	21W/32cp	BA 15s	2
Tail lights	2x67	5 W/4cp	BA 15s	2
Tail light/Brake light	1156	21 W/32cp	BA 15s	2
High-mounted brake light	1156	21 W/32cp	BA 15s	1
Back-up lights	1156	21 W/32cp	BA 15s	2
Rear fog light	1156	21 W/32cp	BA 15s	2
Front fog light	GE881	27 W	-	2
License plate light	4 W	BA 9s	2	
Door warning lights	3 W	W 2.1 x 9.5 d	4	
Interior light	10 W	SV 8.5	1	

Reading lights, front	5 W	W 2.1 x 9.5 d	2
rear	5 W	W 2.1 x 9.5 d	2
Engine compartment light	10 W	SV 8.5	1
Trunk light	10 W	SV 8.5	1
Glove box light	2 W	BA 9s	1
Instrument lighting	3 W	W 2.1 x 9.5 d	3
Lighting, control panel	1.2 W	Volvo P/ N966326	12
A/T selector	1.2 W	Volvo P/ N966326	1
Ashtray, rear	1.2 W	Volvo P/ N966326	1
Seat belt lock	1.2W	Volvo P/ N966326	1
Instrument warning/ indicator lights	1.2W	Volvo P/ N966326	-
Rear seatbelt indicator light	2 W	BA 9S	1

The tires on your Volvo should perform to specifications at all normal loads when inflated as recommended on the tire information label. The label is located on the rear-facing edge of the right-front door. This label lists both tire and vehicle design limits. Do not load your car beyond the load limits indicated.



WARNING!

Improperly inflated tire will reduce tire life, adversely affect vehicle handling and can possibly lead to failure resulting in loss of vehicle control prior warning.

All specifications are subject to change without notice.

Capacities

760 GLE 760 Turbo
Sedan

Fuel tank (approx.) 21 US gal. 21 US gal.
80 liters 80 liters
Cooling System 10.6 US qts. 10 US qts.
10 liters 9.5 liters
Engine 6.3 US qts 4.0 US qts*
at oil change 6.0 liters 3.85 liters
Engine, 6.3 US qts 3.5 US qts
excl. oil filter 6.0 liters 3.35 liters
Automatic transmission 7.9 US qts. 7.9 US qts.
(AW 71) 7.5 liters 7.5 liters
Rear axle 1.7 US qts 1.7 US qts
1.6 liters 1.6 liters
Power steering gear 1.05 US qts 0.7 US qts
1.0 liter 0.7 liter

* If oil cooler is drained, add 0.7 US qts (0.6 liter)

Service Manuals for your Volvo are available for purchase. These are the same manuals used by competent Volvo technicians.

Major sections within the Service Manual System include: 0-General Information; 1- Lubrication and Service; 2- Engine; 3- Electrical System; 4- Power Transmission; 5-Brakes; 6- Suspension and Steering; 7- Springs Shock Absorbers and Wheels; 8- Body and Interior.

A Service Manual Catalog/Order form was placed in the car prior to delivery from the dealer to you. Complete ordering information is provided.

Please note that these manuals may be offered for sale by your Volvo dealer. Prices charged by the dealer can vary from those listed in the brochure (according to Federal law).

Additional copies of the brochure/Order Form may be obtained from your Volvo dealer, or by mail directly from:

Volvo Cars of North America
Service Publications
One Volvo Drive
Rockleigh, New Jersey 07647

Note! The above pertains to USA only.

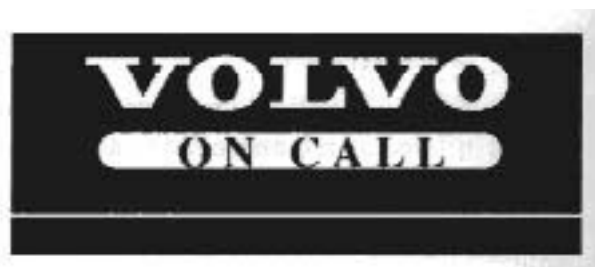
All specifications are subject to change without notice.



Volvo supports Voluntary Mechanic Certification by the A.S.E. Certified mechanics have demonstrated a high degree of competence in specific areas.

Besides passing exams each mechanic must also have worked in the field for two or more years before a certificate is issued. These professional mechanics are fully able to analyze vehicle problems and perform the necessary service procedures to keep your Volvo at peak operating condition.

Note that the above pertains to USA only.



Your new Volvo comes with a four year road assistance program named ON-CALL. Additional information, features, and benefits are described in a separate information package in your glove compartment.

Inside cover page

WARNING!

Detergents and solvents

Do not use gasoline containing lead or benzene as a detergent or solvent. Both lead and benzene are toxic and may be hazardous to your health.

WARNING!

Carbon monoxide is a poisonous, colorless and odorless gas which is present in all exhaust gases. If you ever smell exhaust fumes from inside the vehicle, make sure the passenger compartment is ventilated and immediately return the vehicle to your retailer for correction.

Never sit in a parked or stopped car for any extended amount of time, nor have it unattended while the engine is running.

Never operate the engine in confined, unventilated areas.

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VOLVO

Volvo Car Corporation

Goteborg, Sweden

TP3057/1 (Canada & U.S.A.) 15.5M, 08.89

Printed in Canada



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Volvo Addendum

1990 700 Owner's Manuals U.S.A. & Canada

pg. I Addendum

The information below contains changes to the 700 series 1990 Owner's Manuals; TP3056/1 08.89, TP3057/1 08.89, TP3058/1 08.89

Corrections are listed in a three column format for easier use. The first column indicates topic, model and page number reference. The second column is the present information. The third column indicates the corrected information.

Topic/Model Pg. No.	Present Information	Corrections
Servicing (Brakes), 740 pg 97, 760 pg 103, 780 pg 91	Inspect Brakes. Replace components as necessary. (The present chart indicates this inspection must take place at the first 10,000 miles then every 10,000 miles thereafter .)	The corrected mileage interval inspection must take place the first 10,000 miles then every 5,000 miles thereafter.
Servicing (Exhaust Gas Recirculation EGR), 740 pg 106, 760 pg 108	For the 740 , The present information indicates; The EGR valve should be inspected every 12,000 miles (20,000 km) and cleaned every 24,000 miles (40,000 km). For the 760 , The present information indicates; The EGR valve should be cleaned after 48,000 miles (80,000 km) and then at 24,000 mile (40,000 km) intervals.	The corrected information for all models is; The EGR valve should be inspected at the 60,000 mile (96,000 km) inspection and thereafter cleaned every 20,000 miles (32,000 km.)

Servicing (Timing Gear belt), 740 pg 103	The present information indicates the following; The timing gear belt should be adjusted at the 600-1,200 mile (1000-2000 km) inspection for B230F/FT engines or 5000 miles (8000 km) for B234F engines. We recommend that the belt be replaced every 50,000 miles (80,000 km).	The corrected information is; The timing gear belt should be adjusted at the 600-1,200 mile (1000-2000 km) inspection for B230F/FT engines or 5000 miles (8000 km) for B234F engines. For the B234F engine only, the first timing gear belt adjustment at 5000 miles (8000 km) will be done free of charge. We recommend that the timing gear belt be replaced every 50,000 miles (80,000 km) for both engines.
Servicing (Emission System Maintenance/Automatic Transmission Fluid), 740 pg 96	The present statement for Automatic Transmission fluid has a deleted footnote 6	When performing this operation refer to footnote 6 as well.

pg. II Addendum

Topic/Model Pg. No.	Present Information	Corrections
Servicing (Miscellaneous Maintenance/ EGR valve), 740 pg 97	The present information within the chart EGR valve, clean indicates an inspection at 50,000 miles (80,000 km).	The EGR valve, clean maintenance should be performed at the 60,000 mile (96,000 km) inspection
Servicing (Miscellaneous Maintenance/ change brake fluid), 740 pg 97	The present information indicates a footnote after the change brake fluid maintenance.	Please disregard this footnote as it does not apply to the maintenance service to be performed.
Servicing (Emission System Maintenance/ Exhaust System), 760 pg 102, 780 pg 90	The present information indicates Exhaust System within the chart.	The correct information is: Exhaust system (B280F engine only)

Servicing (Miscellaneous Maintenance/ EGR, clean), 740 pg 103	The present information indicates that EGR valve, clean inspection should be performed at the 50,000 mile (80,000 km) interval.	The EGR valve, clean inspection should be performed at the 60,000 mile (96,000 km) inspection interval.
Fuel Requirements, Refueling (Octane Rating) 740 pg 47, 760 pg 49	The present information under Octane Rating, last sentence indicates; Turbo models should be run on RON 95 fuel only.	Please disregard this sentence.
Fuel requirements, Refueling (Detergent or Injector Cleaning Gasoline), 740 pg 47, 760 pg 49	The present information is; Detergent or Injector Cleaning Gasoline The use of specially formulated gasoline which contains so called "detergent injector cleaning" additives is allowed and recommended by Volvo. The use of these detergent additives in gasoline has been shown to be effective in reducing the buildup of certain injector deposits.	The correct information is; Deposit Control Gasolines - Volvo strongly recommends the use of gasoline that has been refinery blended with "Deposit Control" additives. These additives are specially formulated to prevent the buildup of certain injector and intake system deposits. Fuels containing "Deposit Control" additives are usually advertised as such and may have additional claims to "clean injectors and intake valves" or similar wording If it is not clear whether the fuel contains such additives, ask the station operator for further information regarding the detergency of their gasolines.
Driving Economy, Carbon Deposits (Carbon Deposit Buildup), 740 pg 56 and Break in Period, Fuel Requirements (Carbon Deposit Buildup), 760 pg 48	The present information is: NOTE: Volvo does not recommend the use of fuel additives as they can adversely affect engine performance.	The correct information is; NOTE: Volvo does not recommend the use of bottled or canned additives as they can adversely affect engine performance.

Back cover Addendum

VOLVO

VOLVO NORTH AMERICA CORPORATION
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